U.S. DEPARTMENT OF COMMERCE
National Technical Information Service

PB-287 165

Water Resources Data for Arizona, Water Year 1971. Part 2. Water Quality Records

(U.S.) Geological Survey, Tucson, AZ Water Resources Div

1972

PB 287165

1971

Water Resources Data for Arizona

Water Year 1971

Part 2. Water Quality Records

MARCH 3, 1849

REPRODUCED BY
NATIONAL TECHNICAL
INFORMATION SERVICE
U. S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA. 22161

UNITED STATES
DEPARTMENT OF THE INTERIOR

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT AZ-71-2

Prepared in cooperation with the State of Arizona
and with other agencies

167

BIBLIOGRAPHIC DATA SHEET

1. Report No. USGS/WRD/HD-78/093

2.

3. Recipient's Accession No. PB287165

4. Title and Subtitle

Water Resources Data for Arizona
Water Year 1971
Part 2. Water Quality Records

5. Report Date 1972

6.

7. Author(s)

8. Performing Organization Rept. No. USGS-WDR-AZ-71-2

9. Performing Organization Name and Address

U.S. Geological Survey, Water Resources Division
Federal Building
301 W. Congress Street
Tucson, AZ 85701

10. Project/Task/Work Unit No.

11. Contract/Grant No.

12. Sponsoring Organization Name and Address

U.S. Geological Survey, Water Resources Division
Federal Building
301 W. Congress Street
Tucson, AZ 85701

13. Type of Report & Period Covered Annual - Oct. 1, 1970 to Sept. 30, 1971

14.

15. Supplementary Notes

Prepared in cooperation with the State of Arizona and with other agencies.

16. Abstracts

Water resources data for the 1971 water year for Arizona consist of records of discharge and water quality of streams, and water quality of lakes and reservoirs. This report contains water quality for 47 gaging stations. Additional water data were collected at various sites, not part of the systematic data collection program, and are published as miscellaneous analyses. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating local, State, and Federal agencies in Arizona.

17. Key Words and Document Analysis. 17a. Descriptors

*Arizona, *Hydrologic data, *Water quality, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediments, Water temperatures, Sampling sites, Water analyses.

17b. Identifiers/Open-Ended Terms

17c. COSATI Field/Group

18. Availability Statement No restriction on distribution.
This report may be purchased from:
National Technical Information Service
Springfield, VA 22161

19. Security Class (This Report) UNCLASSIFIED

20. Security Class (This Page) UNCLASSIFIED

21. No. of Pages 167

22. Price MF A01 PC A08

FORM NTIS-35 (REV. 10-73) ENDORSED BY ANSI AND UNESCO. THIS FORM MAY BE REPRODUCED USCOMM-DC 8265-P74

1971

Water Resources Data
for
Arizona
Water Year 1971

Part 2. Water Quality Records

UNITED STATES
DEPARTMENT OF THE INTERIOR

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT AL-71-2

Prepared in cooperation with the State of Arizona
and with other agencies

I

Prepared in cooperation with

Bureau of Reclamation, U.S. Department of the Interior
Environmental Protection Agency, U.S. Department of the Interior
Soil Conservation Service, U.S. Department of Agriculture
Arizona Water Commission
Metropolitan Water District of Southern California

Water resources records, 1971 for Arizona are in the following reports of the U.S. Geological Survey:

1. Water Resources Data for Arizona
   Part 1. Surface Water Records

2. Water Resources Data for Arizona
   Part 2. Water Quality Records

Copies of this report may be obtained from
District Chief, Water Resources Division
U.S. Geological Survey
P. O. Box 4070
Tucson, Arizona 85717

1973

CONTENTS

Page

List of water-quality stations, in downstream order, for which records are published V
Introduction 1
Cooperation 1
Definition of terms 2
Special networks and programs 7
Downstream order and station numbers 8
Collection and examination of data 9
  Solutes 13
  Temperature 13
  Sediment 14
Water-supply papers 15
Selected references 15
Water-quality records 18
Index 153

ILLUSTRATIONS

Figure 1. Map of Arizona showing location of water-quality stations 10

2. Schematic diagram showing water-quality stations on streams, diversions, and return flows between Imperial Dam and the southerly international boundary 11

CONTENTS

TABLES

Page

Table 1. Factors for conversion of chemical constituents in milligrams or micrograms per liter to milliequivalents per liter 3

2. Factors for conversion of sediment concentration in parts per million to milligrams per liter 4

3. Degrees Fahrenheit (°F) to Celsius (°C) 12

4. Annual series of water-supply papers on quality of surface waters in Arizona 15

WATER-QUALITY STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED

[Letters after station name designate type of data: (c), chemical or specific conductance; (t), water temperature; (s), sediment]

Page

COLORADO RIVER BASIN

Colorado River:

Colorado River at Lees Ferry (cts) 18

PARIA RIVER BASIN

Paria River at Lees Ferry (cts) 22
Colorado River near Grand Canyon (cts) 28

BRIGHT ANGEL CREEK BASIN

Bright Angel Creek near Grand Canyon (c) 35

KANAB CREEK BASIN

Kanab Creek near Fredonia (cts) 36

VIRGIN RIVER BASIN

Virgin River at Littlefield (ct) 40
Lake Mead at Hoover Dam, Ariz.-Nev. (c) 44
Colorado River below Hoover Dam, Ariz.-Nev. (c) 48
Colorado River below Davis Dam, Ariz.-Nev. (c) 50
Colorado River near Topock (c) 52
Colorado River below Parker Dam, Ariz.-Calif. (c) 54

DIVERSIONS AND RETURN FLOWS BETWEEN PARKER DAM AND PALO VERDE DAM

Colorado River Indian Reservation Main Canal near Parker (c). 56
Poston wasteway near Poston (c) 58
Palo Verde Canal near Blythe, Calif. (c) 60

DIVERSIONS AND RETURN FLOWS BETWEEN PALO VERDE DAM AND IMPERIAL DAM

Palo Verde Drain near Parker (c) 62
Lower Main Drain near Parker (c) 63
Olive Lake Drain near Blythe, Calif. (c) 64
Colorado River at Taylor Ferry, Calif. (c) 66

DIVERSIONS AND RETURN FLOWS BETWEEN PALO VERDE DAM AND IMPERIAL DAM

Outfall Drain near Palo Verde, Calif. (c) 68
Anderson Drain near Palo Verde, Calif. (c) 70
Colorado River below Cibola Valley (c) 72
Colorado River at Imperial Dam, Ariz.-Calif. (c) 74
Colorado River above Gila River (c) 78

WATER-QUALITY STATIONS, IN DOWNSTREAM ORDER—Continued

COLORADO RIVER BASIN—Continued Page

GILA RIVER BASIN

Gila River at head of Safford Valley, near Solomon (cts) 80
  Frye Creek at Thatcher (s) 84
  San Pedro River at Charleston (cts). 85
  San Pedro River near Benson (s). 89
  San Pedro River at Winkelman (cts). 92
Gila River at Kelvin (cts). 96
  Salt River:
  Salt River below Stewart Mountain Dam (ct) 102
    Verde River:
      Wet Bottom Creek near Childs (cs) 104
    Verde River below Bartlett Dam (ct) 107
Gila River above diversions, at Gillespie Dam (ct). 110
Gila River near mouth, near Yuma (c) 114
Colorado River at northerly international boundary, above Morelos Dam, near Andrade, Calif. (c) 118
Colorado River at southerly international boundary, near San Luis (c) 122

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

Gila Gravity Main Canal at Imperial Dam, Ariz.-Calif. (ct) . . 124
South Gila Pump Outlet Channel No. 3 near Yuma (c) 126
South Gila Pump Outlet Channel No. 2 near Yuma (c) 128
Wellton-Mohawk Main Outlet Drain near Yuma (c) 130
South Gila Pump Outlet Channel No. 1 near Yuma (c) 132
South Gila Pump Outlet Channel No. 4 near Yuma (c) 134
Reservation Main Drain No. 4 near Yuma (c) 136
Main Outlet Drain Extension near Morelos Dam (c) 138
Main Drain near San Luis (c) 140
West Main Canal wasteway near Yuma (c). 143
East Main Canal wasteway near San Luis (c) 144
Analyses of samples collected at partial-record stations. 146

WATER RESOURCES DATA FOR ARIZONA, 1971

PART 2. WATER-QUALITY RECORDS

INTRODUCTION

Water-resources investigations of the U.S. Geological Survey include the collection of water-quality data on the chemical and physical characteristics of surface- and ground-water supplies of the Nation. These data for the 1971 water year for the quality of surface waters in Arizona are presented in this report. The data were collected by the Water Resources Division of the U.S. Geological Survey under the direction of H. M. Babcock, district chief.

The Geological Survey published the annual series of water-supply papers, "Quality of Surface Waters of the United States," from 1941 through 1965, which contained the chemical-quality, temperature, and suspended-sediment data of the water. Each volume covered an area whose boundaries coincided with those of certain natural drainage areas. The records for Arizona are contained in part 9 of the water-supply paper series. (See table 4.) These publications are available in most public libraries. Beginning with the 1964 water year, water-quality records for surface water obtained by the Geological Survey have been published in a series of annual releases on a State boundary basis. These reports are primarily for local and immediate use, and their distribution is limited. The records also will be published in Geological Survey water-supply papers.

COOPERATION

Assistance in the form of funds or services was given by the Bureau of Reclamation, Environmental Protection Agency, U.S. Department of the Interior; Soil Conservation Service, U.S. Department of Agriculture; International Boundary and Water Commission, Department of State; Arizona Water Commission; Salt River Valley Water Users' Association; and Metropolitan Water District of Southern California. Several stations were operated from funds appropriated directly to the Geological Survey.

Water-quality data from Lake Mead at Hoover Dam were furnished by the Metropolitan Water District of Southern California.

DEFINITION OF TERMS

Definition of terms and abbreviations related to water-quality and hydrologic data, as used in the text and tabular data of this report, are defined as follows:

Acre-foot (ac-ft, AC-FT) is a quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43, 560 cubic feet or about 326, 000 gallons.

Bed material is the shifting portion of fragmented alluvial material of which the streambed is composed.

Cfs-day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86, 400 cubic feet, approximately 1.9835 acre-feet, or about 646, 000 gallons, and represents a runoff of 0.0372 inch from 1 square mile.

Cubic foot per second (cfs, CFS) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to 7.48 gallons per second or 448.8 gallons per minute.

Discharge is the volume of water (or more broadly, total fluids) that passes a given point within a given period of time.

> Mean discharge is the arithmetic mean of individual daily mean discharges during a specific period.
>
> Instantaneous discharge is the discharge at a particular instant of time. If this discharge is reported instead of the daily mean, the heading of the discharge column in the tables is "Discharge (cfs)."

Drainage area of a stream at a specified location is that area, measured in horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the river above the specified point.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of gage height or discharge are obtained. When used in connection with a discharge record, the term is applied only to those gaging stations where a continuous record of discharge is obtained.

Hardness of water is a physical-chemical characteristic attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate ($CaCO_3$).

Micrograms per liter ($\mu g/l$, UG/L) is a unit expressing the concentration of chemical constituents in solution as weight (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter (mg/l, MG/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represents the weight of solute per unit volume of water. Milligrams or micrograms per liter may be converted to milliequivalents (one thousandth of a gram-equivalent weight of a constituent) per liter by multiplying by the factors in table 1 below. Concentration of suspended sediment expressed in milligrams per liter is based on the weight of sediment in a liter of water-sediment mixture. Sediment concentrations are determined in the laboratory as parts per million (ppm) and are converted to milligrams per liter by using the factors in table 2, page 4.

Table 1.--Factors for conversion of chemical constituents in milligrams or micrograms per liter to milliequivalents per liter

Ion	Multiply by	Ion	Multiply by
Aluminum (Al^{+3})*	0.11119	Chloride (Cl^{-1})	0.02821
Ammonia as NH_4^{+1}	.05544	Chromium (Cr^{+6})*	.11539
Barium (Ba^{+2})	.01456	Cobalt (Co^{+2})*	.03394
Bicarbonate (HCO_3^{-1})	.01639	Copper (Cu^{+2})*	.03148
Bromide (Br^{-1})	.01251	Cyanide (CN^{-1})	.03844
Calcium (Ca^{+2})	.04990	Fluoride (F^{-1})	.05264
Carbonate (CO_3^{-2})	.03333	Hydrogen (H^{+1})	.99209

See footnote at end of table.

Table 1.-- Factors for conversion of chemical constituents in milligrams or micrograms per liter to milliequivalents per liter—Continued

Ion	Multiply by	Ion	Multiply by
Hydroxide (OH^{-1})	0.05880	Nitrate (NO_3^{-1})	0.01613
Iodide (I^{-1})	.00788	Nitrite (NO_2^{-1})	.02174
Iron (Fe^{+3})*	.05372	Phosphate (PO_4^{-3})	.03159
Lead (Pb^{+2})*	.00965	Potassium (K^{+1}).	.02557
Lithium (Li^{+1})*	.14411	Sodium (Na^{+1})	.04350
Magnesium (Mg^{+2})	.08226	Strontium (Sr^{+2})*	.02283
Manganese (Mn^{+2})*. . . .	.03640	Sulfate (SO_4^{-2}).	.02082
Nickel (Ni^{+2})*	.03406	Zinc (Zn^{+2})*	.03060

*Constituent reported in micrograms per liter; multiply by factor and divide results by 1,000.

Table 2.--Factors for conversion of sediment concentration in parts per million to milligrams per liter*

[All values calculated to three significant figures]

Range of concentration (ppm)	Multiply by	Range of concentration (ppm)	Multiply by
0 - 15,900	1.00	322,000 - 341,000	1.26
16,000 - 46,800	1.02	342,000 - 361,000	1.28
46,900 - 76,500	1.04	362,000 - 380,000	1.30
76,600 - 105,000	1.06	381,000 - 399,000	1.32
106,000 - 133,000	1.08	400,000 - 416,000	1.34
134,000 - 159,000	1.10	417,000 - 434,000	1.36
160,000 - 185,000	1.12	435,000 - 451,000	1.38
186,000 - 210,000	1.14	452,000 - 467,000	1.40
211,000 - 233,000	1.16	468,000 - 483,000	1.42
234,000 - 256,000	1.18	484,000 - 498,000	1.44
257,000 - 279,000	1.20	499,000 - 514,000	1.46
280,000 - 300,000	1.22	515,000 - 528,000	1.48
301,000 - 321,000	1.24	529,000 - 542,000	1.50

*Based on water density of 1.000 g/ml and sediment density of 2.65 g/cc.

Miscellaneous site is a location other than continuous- or partial-record stations where random samples are collected to give better areal coverage of water-quality conditions in a river basin.

Partial-record station is a particular site where limited streamflow or water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle size is the diameter, in millimeters (mm), of suspended sediment or bed material determined either by sieve or sedimentation methods.

Particle-size classification, used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay	0.00024 - 0.004	Sedimentation
Silt	.004 - .062	Sedimentation
Sand	.062 - 2.0	Sedimentation or sieve
Gravel	2.0 - 64.0	Sieve

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic material is removed and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native-water analysis (Guy, 1969).

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Suspended-sediment discharge is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight, or by volume, that is discharged in a given time. It is computed by multiplying discharge times milligrams per liter times 0.0027.

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 foot above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/l).

Mean concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour period.

Sodium adsorption ratio (SAR) is the expression of relative activity of sodium ions in exchange reaction with soil and is an index of sodium or alkali hazard to the soil. This ratio should be known especially for water used for irrigating farmland.

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current and is expressed in micromhos per centimeter at 25°C. Because the specific conductance is related to the number and specific chemical types of ions in solution, it can be used for approximating the dissolved-solids content in the water. Commonly, the amount of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream, and it may even vary in the same source with changes in the composition of the water.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff." Streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Thermograph is a thermometer that continuously and automatically records, on a chart, the water temperature of a stream. "Temperature recorder" is the term used to indicate the location of the thermograph or a digital mechanism that automatically records water temperature on paper tape.

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the water year.

Tons per acre-foot indicates the dry weight of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration in milligrams per liter by 0.00136.

Tons per day is the quantity of a substance in solution or suspension that passes a stream section during a 24-hour period.

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

SPECIAL NETWORKS AND PROGRAMS

Some of the stations for which data are published in this report are included in special networks and programs. These stations are identified by their title, set in parentheses, under the station name.

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a bench-mark station may be used to separate effects of natural from manmade changes in other basins which have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin.

Irrigation network stations are water-quality stations located at or near certain streamflow gaging stations west of the main stem of the Mississippi River. Data collected at these stations are used to evaluate the chemical quality of surface waters used for irrigation and the changes resulting from the drainage of irrigated lands. Prior to the water year 1966, the data for these stations were published in the annual water-supply paper series, "Quality of Surface Waters for Irrigation, Western States."

Pesticide program is a network of regularly sampled water-quality stations where additional monthly samples are collected to determine the concentration and distribution of pesticides in streams whose waters are used for irrigation or in streams in areas where potential contamination could result from the application of the commonly used insecticides and herbicides.

Radiochemical program is a network of regularly sampled water-quality stations where additional samples are collected twice a year (at high and low flow) to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

DOWNSTREAM ORDER AND STATION NUMBERS

Records are listed in a downstream direction along the main stream, and stations on tributaries are listed between stations on the main stream in the order in which those tributaries enter the main stream. Stations on tributaries entering above all mainstream stations are listed before the first mainstream station. Stations on tributaries to tributaries are listed in a similar manner. In the list of water-quality stations in the front of this report the rank of tributaries is indicated by indention, each indention representing one rank.

As an added means of identification, each water-quality station, gaging station, and partial-record station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record and continuous-record stations; therefore, the station number for a partial-record station indicates downstream order position in a list made up of both types of stations. Water-quality stations located at or near gaging stations or partial-record stations have the same number as the gaging or partial-record station. Gaps are left in the numbers to allow for new stations that may be established; hence the numbers are not consecutive. The complete 8-digit number for each station, such as 09448500, includes the part number "09" and a 6-digit station number. This complete number appears just to the left of the station name. All records for a drainage basin encompassing more than one State could be arranged in downstream order by assembling pages from the various State reports by station number to include all records in the basin.

COLLECTION AND EXAMINATION OF DATA

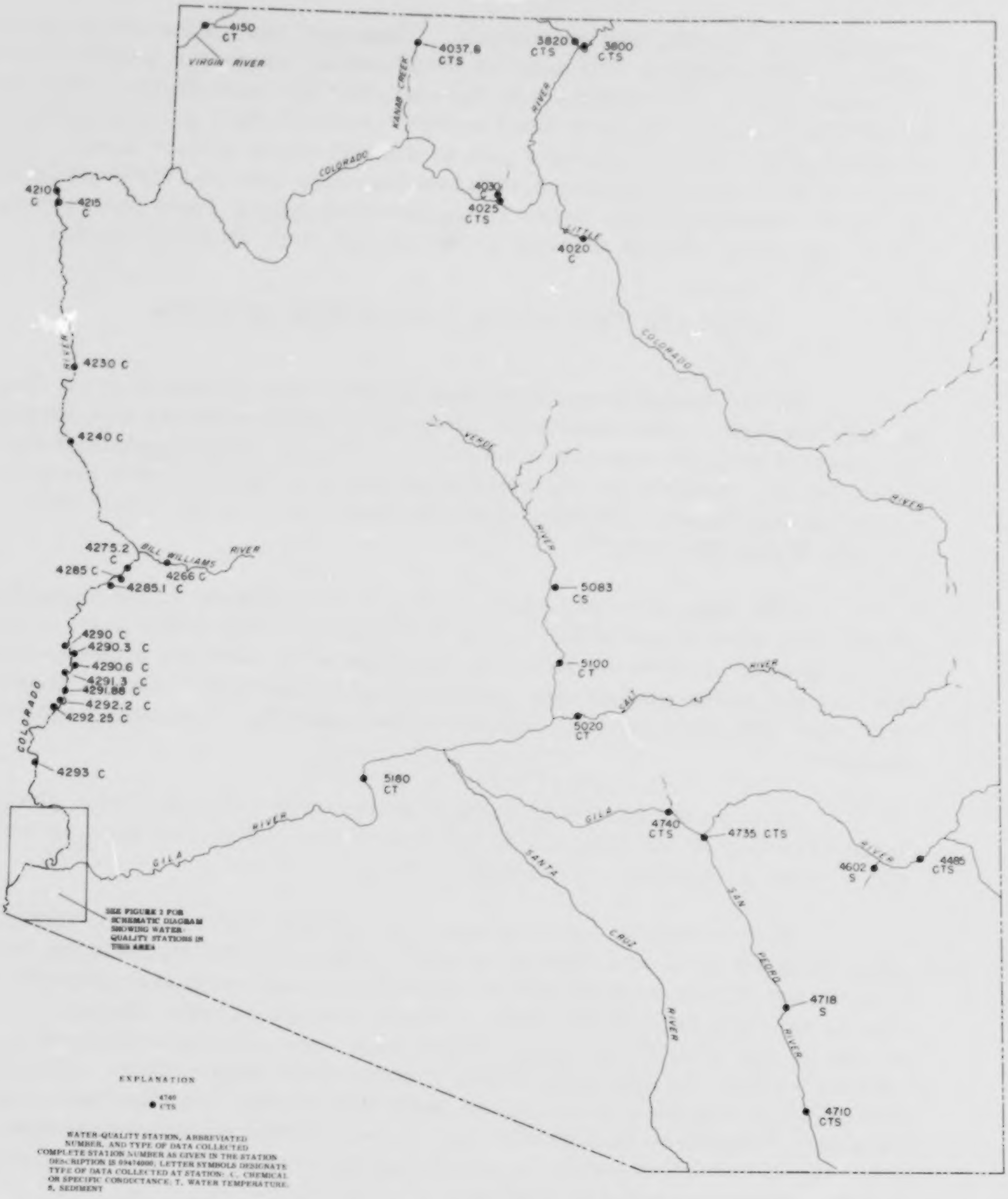
Water samples for analyses usually are collected at or near gaging stations. The discharge records at these stations are used in conjunction with the computations of the chemical constituents and sediment loads. Discharge records for streams in Arizona have been released in the report, "Water Resources Data for Arizona, 1971, Part 1. Surface Water Records."

The data in this report include a description of the sampling station and tabulations of the samples analyzed. The description of the sampling station gives the location, drainage area, periods of record for the various water-quality data, extremes of the pertinent data, and general remarks, in a format similar to that used for streamflow gaging stations.

Data on the quality of surface water were collected from designated sampling sites (fig. 1) at predetermined intervals such as once daily, weekly, monthly, or less frequently.

Water-quality information is presented for chemical quality, water temperature, and fluvial sediment. Chemical quality includes concentrations of individual dissolved constituents and certain properties or characteristics such as hardness, sodium adsorption ratio, specific conductance, and pH. Water-temperature data represent once-daily observations except for stations where a continuous temperature recorder furnishes information from which daily minimums and maximums are obtained. Fluvial-sediment information is given for suspended-sediment discharges and concentrations and for particle-size distribution of suspended sediment and bed material.

Prior to the 1968 water year, data for chemical constituents and concentrations of suspended sediment were reported in parts per


4150
CT
VIRGIN RIVER
4037.8
CTS
KANAB CREEK
3820
CTS
3800
CTS
RIVER
COLORADO
4210
C
4215
C
4030
C
4025
CTS
LITTLE
4020
C
COLORADO
RIVER
4230 C
4240 C
VERDE
RIVER
RIVER
4275.2
C
BILL WILLIAMS
RIVER
4285 C
4266 C
4285.1 C
5083
CS
4290 C
4290.3 C
4290.6 C
4291.3 C
4291.88 C
4292.2 C
4292.25 C
COLORADO
5100
CT
RIVER
SALT
5020
CT
4293 C
5180
CT
GILA
RIVER
GILA
4740
CTS
4735 CTS
RIVER
4602
S
4485
CTS
SANTA
CRUZ
RIVER
SAN
PEDRO
RIVER
4718
S
4710
CTS
SEE FIGURE 2 FOR SCHEMATIC DIAGRAM SHOWING WATER-QUALITY STATIONS IN THIS AREA
4740
CTS

EXPLANATION

WATER-QUALITY STATION, ABBREVIATED NUMBER, AND TYPE OF DATA COLLECTED. COMPLETE STATION NUMBER AS GIVEN IN THE STATION DESCRIPTION IS 09474000. LETTER SYMBOLS DESIGNATE TYPE OF DATA COLLECTED AT STATION: C, CHEMICAL OR SPECIFIC CONDUCTANCE; T, WATER TEMPERATURE; S, SEDIMENT

FIGURE 1.--MAP OF ARIZONA SHOWING LOCATION OF WATER-QUALITY STATIONS.

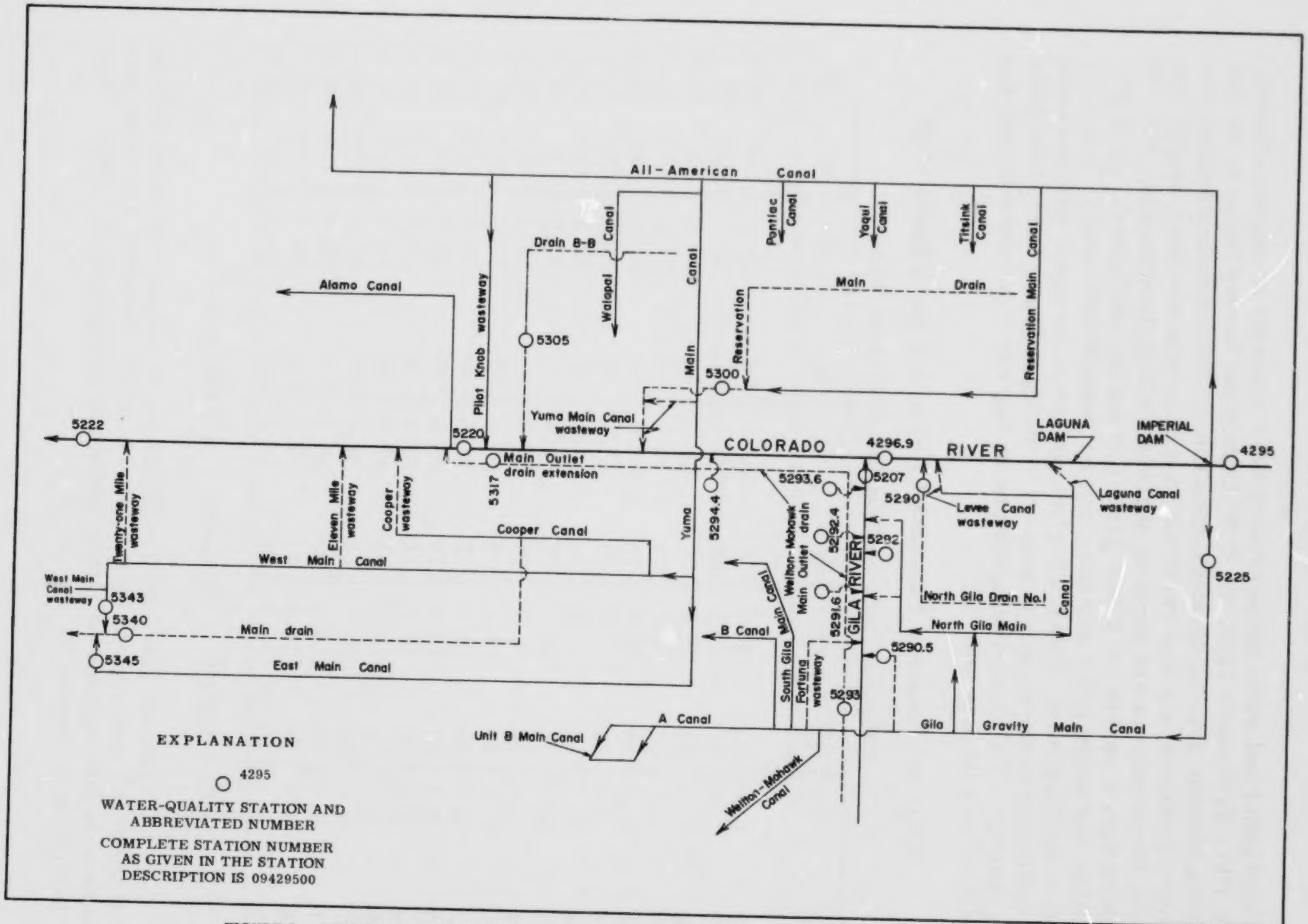

All-American Canal
Pontiac Canal
Yaqui Canal
Titsink Canal
Reservation Main Canal
Main Drain
Reservation
Drain 8-8
Walapai Canal
Main Canal
Alamo Canal
Pilot Knob wasteway
5305
5300
Yuma Main Canal wasteway
LAGUNA DAM
IMPERIAL DAM
4295
5222
5220
COLORADO
RIVER
4296.9
Main Outlet drain extension
5317
Yuma
5294.4
5293.6
5207
5290
Levee Canal wasteway
Laguna Canal wasteway
Twenty-one Mile wasteway
Eleven Mile wasteway
Cooper wasteway
Cooper Canal
West Main Canal
West Main Canal wasteway
5343
5340
5345
Main drain
East Main Canal
Wellton-Mohawk Main Outlet drain
5292.4
5292
GILA RIVER
5291.6
North Gila Drain No.1
North Gila Main Canal
5225
B Canal
South Gila Main Canal
Fortuna wasteway
5290.5
5293
A Canal
Unit B Main Canal
Gila Gravity Main Canal
Wellton-Mohawk Canal
EXPLANATION
4295
WATER-QUALITY STATION AND ABBREVIATED NUMBER
COMPLETE STATION NUMBER AS GIVEN IN THE STATION DESCRIPTION IS 09429500

FIGURE 2.--SCHEMATIC DIAGRAM SHOWING WATER-QUALITY STATIONS ON STREAMS, DIVERSIONS, AND RETURN FLOWS BETWEEN IMPERIAL DAM AND THE SOUTHERLY INTERNATIONAL BOUNDARY.

million (ppm) and water temperatures were reported in degrees Fahrenheit (°F). In October 1967, the U.S. Geological Survey began to use the metric system; data for chemical constituents and concentrations of suspended sediment are now reported in milligrams per liter (mg/l) and water temperatures are given in degrees Celsius (centigrade, °C). In waters with a density of 1.000 g/ml (grams per milliliter), parts per million and milligrams per liter can be considered equal. In waters with a density greater than 1.000 g/ml, values in parts per million should be multiplied by the density to convert to milligrams per liter. (See table 2, page 4.) To convert temperature in degrees Fahrenheit to degrees Celsius, see table below.

Table 3.--Degrees Fahrenheit (°F) to degrees Celsius (°C)*

[Temperature reported to nearest 0.5°C]

°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
32	0.0	50	10.0	68	20.0	86	30.0	104	40.0
33	.5	51	10.5	69	20.5	87	30.5	105	40.5
34	1.0	52	11.0	70	21.0	88	31.0	106	41.0
35	1.5	53	11.5	71	21.5	89	31.5	107	41.5
36	2.0	54	12.0	72	22.0	90	32.0	108	42.0
37	3.0	55	13.0	73	23.0	91	33.0	109	43.0
38	3.5	56	13.5	74	23.5	92	33.5	110	43.5
39	4.0	57	14.0	75	24.0	93	34.0	111	44.0
40	4.5	58	14.5	76	24.5	94	34.5	112	44.5
41	5.0	59	15.0	77	25.0	95	35.0	113	45.0
42	5.5	60	15.5	78	25.5	96	35.5	114	45.5
43	6.0	61	16.0	79	26.0	97	36.0	115	46.0
44	6.5	62	16.5	80	26.5	98	36.5	116	46.5
45	7.0	63	17.0	81	27.0	99	37.0	117	47.0
46	8.0	64	18.0	82	28.0	100	38.0	118	48.0
47	8.5	65	18.5	83	28.5	101	38.5	119	48.5
48	9.0	66	19.0	84	29.0	102	39.0	120	49.0
49	9.5	67	19.5	85	29.5	103	39.5	121	49.5

*°C = 5/9 (°F − 32) or °F = 9/5 (°C) + 32.

In October 1968, the Geological Survey began reporting many of the chemical constituents as well as the minor elements and some pollutants in micrograms per liter instead of milligrams per liter. (See "Definition of Terms.")

Solutes

The methods of collecting and analyzing water samples for determining the kinds and concentrations of solutes are described by Brown, Skougstad, and Fishman (1970). One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge depending on the source of material and the turbulence and the mixing of the stream. Some must be sampled at several verticals across the channel to determine accurately the solute load.

The daily chemical-quality data in this report represent equal-volume composites for 2- to 30-day periods; the composite periods are selected on the basis of specific conductance of the daily samples and fluctuation of water discharge.

At sites where water-quality data were collected less frequently than daily, the data may represent conditions only at the time of sampling. For such sites, however, observations obtained over a period of years show relations that are useful in predicting the long-term water-quality characteristics.

If dissolved solids are reported in an analysis as both residue on evaporation at 180°C and sum of determined constituents, the values for "tons per day" and "tons per acre-foot" are calculated from the residue on evaporation at 180°C.

Temperature

Water temperatures are measured at most of the water-quality stations. For daily stations, the water temperatures are taken at about the same time each day in order that the data will not reflect normal variations in water temperature. Most large streams have a small diurnal temperature change; small, shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. The thermometers used for determining the water temperature are accurate to plus or minus 0.5°C.

At stations where continuously recording thermographs are located, the records consist of maximum and minimum temperatures for each day and the monthly averages.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross section.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided-day method (time-discharge weighted average). Therefore, for those days when the published sediment-discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided-day method. For periods when no samples were collected, daily loads of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of the quantities of suspended sediment, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included.

WATER-SUPPLY PAPERS

Table 4 shows the annual series of water-supply papers that give information on quality of surface waters in Arizona. Data for the Colorado River basin are given in part 9.

Table 4.--Annual series of water-supply papers on quality of surface waters in Arizona

Water year	Water-supply paper number	Water year	Water-supply paper number	Water year	Water-supply paper number
1941	A942	1950	C1189	1959	C1645
1942	A950	1951	C1200	1960	C1745
1943	A970	1952	C1253	1961	C1885
1944	A1022	1953	C1293	1962	C1945
1945	A1030	1954	C1353	1963	C1951
1946	A1050	1955	C1403	1964	D1958
1947	A1102	1956	C1453	1965	D1965
1948	B1133	1957	C1523	1966	D1995
1949	B1163	1958	C1574	1967	D2015

A Parts 1-14.
B Parts 7-14.
C Parts 9-14.
D Parts 9-11.

SELECTED REFERENCES

American Public Health Association, and others, 1971, Standard methods for the examination of water and wastewater, 13th ed.: Am. Public Health Assoc., New York, 874 p.

Brown, Eugene, Skougstad, M. W., and Fishman, M. J., 1970, Methods for collection and analysis of water samples for dissolved minerals and gases: U.S. Geol. Survey Techniques Water-Resources Inv., book 5, chap. A1, 160 p.

Colby, B. R., 1963, Fluvial sediments—a summary of source, transportation, deposition, and measurement of sediment discharge: U.S. Geol. Survey Bull. 1181-A, 47 p.

Colby, B. R., and Hembree, C. H., 1955, Computations of total sediment discharge, Miobrara River near Cody, Nebraska: U.S. Geol. Survey Water-Supply Paper 1357, 187 p.

Colby, B. R., and Hubbell, D. W., 1961, Simplified methods for computing total sediment discharge with the modified Einstein procedure: U.S. Geol. Survey Water-Supply Paper 1593, 17 p.

Guy, H. P., 1969, Laboratory theory and methods for sediment analysis: U.S. Geol. Survey Techniques Water-Resources Inv., book 5, chap. C1, 58 p.

__________ 1970, Fluvial sediment concepts: U.S. Geol. Survey Techniques Water-Resources Inv., book 3, chap. C1, 55 p.

Guy, H. P., and Norman, V. W., 1970, Field methods for measurement of fluvial sediment: U.S. Geol. Survey Techniques Water-Resources Inv., book 3, chap. C2, 59 p.

Hem, J. D., 1959, Study and interpretation of the chemical characteristics of natural water: U.S. Geol. Survey Water-Supply Paper 1473, 269 p.

Langbein, W. B., and Iseri, K. T., 1960, General introduction and hydrologic definitions: U.S. Geol. Survey Water-Supply Paper 1541-A, 29 p.

Ritter, J. R., and Helley, E. J., 1969, Optical method for determining particle sizes of coarse sediment: U.S. Geol. Survey Techniques Water-Resources Inv., book 5, chap. C3, 33 p.

U.S. Inter-Agency Committee on Water Resources, Subcommittee on Sedimentation, A study of methods used in measurement and analysis of sediment loads in streams. Published by the St. Anthony Falls Hydraulic Laboratory, Minneapolis, Minn.

__________ 1941, Methods of analyzing sediment samples: Rept. 4.

___________ 1953, Accuracy of sediment-size analyses made by the bottom-withdrawal-tube method: Rept. 10.

___________ 1957, The development and calibration of visual accumulation tube: Rept. 11.

___________ 1957, Some fundamentals of particle-size analysis: Rept. 12.

___________ 1959, Federal Inter-agency sedimentation instruments and reports: Rept. AA.

___________ 1961, The single-stage sampler for suspended sediment: Rept. 13.

___________ 1963, Determinations of fluvial sediment discharge: Rept. 14.

COLORADO RIVER MAIN STEM

09380000 COLORADO RIVER AT LEES FERRY, ARIZ.

(Irrigation network station)

LOCATION.--Lat 36°51'53", long 111°35'15", in NE¼SE¼ sec. 13, T. 40 N., R. 7 E., Coconino County, in Navajo Indian Reservation, at gaging station at head of Marble Gorge at Lees Ferry, 0.8 mile upstream from Paria River, 16 miles downstream from Glen Canyon Dam, 28 miles downstream from Utah-Arizona State line, and 61.5 miles upstream from Little Colorado River.

DRAINAGE AREA.--107,900 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: January to July 1926, October 1926 to June 1927, October 1928 to September 1930, November 1942 to October 1945, October 1947 to September 1971.
Water temperatures: July 1949 to September 1971.
Sediment records: October 1928 to December 1933, November 1942 to September 1944, October 1947 to September 1971.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DISCHARGE (CFS)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)
OCT.												
01-31	--	8000	8.2	--	72	24	74	3.5	150	3	234	51
19...	1145	11200	--	--	72	24	74	3.7	157	0	240	51
NOV.												
09...	1300	7890	8.0	110	68	26	81	3.9	151	0	240	50
16...	1145	9320	--	--	70	23	75	3.7	154	0	230	51
DEC.												
29...	1130	18400	9.0	100	65	23	77	4.0	152	0	210	49
JAN.												
11...	1230	18000	9.0	100	61	23	71	4.0	146	0	220	45
FEB.												
22...	1130	12400	8.8	180	68	27	85	3.5	162	0	230	57
MAR.												
15...	1130	12200	9.4	140	80	27	87	5.0	176	0	260	65
APR.												
28...	0745	9500	10	40	79	27	97	5.5	161	0	290	61
MAY												
21...	0900	9200	9.6	20	79	25	64	3.8	160	0	240	54
JUNE												
25...	1150	19500	9.0	10	68	24	63	3.8	156	0	220	49
JULY												
30...	1330	11000	8.8	10	70	23	72	3.3	162	0	230	47
AUG.												
30...	1415	25000	9.2	10	68	24	74	3.7	155	0	220	47
SEP.												
30...	0810	3900	9.3	20	69	24	65	3.1	155	0	230	42

09380000 COLORADO RIVER AT LEES FERRY, ARIZ.--Continued

EXTREMES, 1970-71:
Specific conductance: Maximum daily, 1,200 micromhos Feb. 2; minimum daily, 700 micromhos Aug. 31, Sept. 3, 4, 11, 12.
Water temperatures: Maximum, 18.0°C Oct. 12; minimum, 5.0°C Mar. 2.

Period of record:
Specific conductance: Maximum daily, 1,260 micromhos Apr. 20, 21, 1967; minimum daily, 460 micromhos Aug. 10, 1965.
Water temperatures: Maximum, 21.0°C on several days during August, September, and October, 1965, 1967, 1968; minimum, 2.0°C Jan. 29, 30, 1970.

REMARKS.--Because of the regulation of flow by Glen Canyon Dam since Mar. 13, 1963, and the subsequent filling of Lake Powell, extreme values for the period of record include only those obtained after July 31, 1965.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
OCT.												
01-31	.4	.59	--	170	559	547	.76	278	150	1.9	857	8.4
19...	--	--	--	--	567	--	.77	280	150	1.9	860	8.2
NOV.												
09...	.4	1.1	.00	100	--	550	.75	280	156	2.1	846	8.1
16...	--	--	--	--	562	--	.76	270	140	2.0	854	8.0
DEC.												
29...	.5	1.3	.00	100	--	510	.69	260	135	2.1	817	8.0
JAN.												
11...	.3	1.1	.00	450	--	510	.69	250	130	2.0	779	7.8
FEB.												
22...	.6	.10	.00	100	--	562	.76	280	147	2.2	902	8.0
MAR.												
15...	.4	.30	.00	100	--	620	.84	310	166	2.1	990	7.7
APR.												
28...	.2	.50	.03	90	--	651	.89	310	180	2.4	974	7.9
MAY												
21...	.2	.82	.03	100	--	558	.76	300	170	1.6	904	7.8
JUNE												
25...	.2	.76	.03	80	--	517	.70	270	140	1.7	845	7.9
JULY												
30...	.4	.71	.00	90	--	537	.73	270	140	1.9	809	7.3
AUG.												
30...	.7	.77	.03	50	--	526	.72	270	140	2.0	839	7.9
SEP.												
30...	.1	1.2	.03	90	--	524	.71	270	140	1.7	836	7.8

09380000 COLORADO RIVER AT LEES FERRY, ARIZ.--Continued

FIELD DETERMINATIONS OF WATER QUALITY, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS- CHARGE (CFS)	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH (UNITS)	TEMP- ERATURE (DEG C)	AIR TEMP- ERATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)
OCT. 19...	1145	11200	940	--	15.3	24.5	7.9
NOV. 16...	1145	9320	980	--	13.1	14.0	9.2
DEC. 29...	1130	18400	780	--	9.8	8.5	8.8
JAN. 11...	1230	18000	750	7.2	8.2	5.2	8.0
FEB. 22...	1130	12400	970	--	7.6	11.5	8.5
MAR. 15...	1130	12200	1020	--	8.2	14.0	8.6
APR. 28...	0745	9500	970	--	8.0	14.0	7.8
MAY 21...	0900	9200	920	--	9.5	18.0	8.8
JUNE 25...	1150	19500	875	--	12.0	40.0	7.8
JULY 30...	1330	11000	800	7.0	11.0	33.5	7.7
AUG. 30...	1415	25000	850	--	13.0	--	8.7
SEP. 30...	0810	3900	800	--	10.5	16.5	6.5

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	860	860	900	--	800	1000	--	--	900	880	810	720
2	860	900	950	920	1200	1100	--	--	890	880	800	750
3	860	900	1000	980	950	1000	940	--	940	900	850	700
4	860	890	1000	900	950	1000	970	--	890	730	950	700
5	860	870	1000	850	900	1000	990	980	880	840	850	800
6	870	890	950	820	880	1000	980	950	850	870	880	800
7	880	890	950	800	920	--	980	990	880	880	--	780
8	880	920	900	900	900	1000	1000	980	880	880	880	780
9	870	910	900	920	880	1000	1000	990	890	860	800	750
10	840	860	1000	750	900	1000	1000	1000	890	820	820	720
11	--	900	1000	800	800	1000	--	1000	890	900	880	700
12	840	900	900	800	820	1000	950	990	890	920	800	700
13	840	890	1000	850	--	950	1000	980	900	850	900	820
14	840	850	950	900	--	1000	1010	980	710	510	840	800
15	840	890	950	800	--	1000	980	980	900	880	880	800
16	830	860	900	--	900	1000	980	990	890	880	870	800
17	840	890	850	--	920	1000	--	990	890	880	880	780
18	860	880	950	--	900	1100	1010	940	900	920	870	720
19	860	890	950	850	920	--	1020	950	900	880	880	720
20	870	900	900	800	--	--	1010	920	870	880	880	720
21	870	900	800	850	990	--	1000	950	810	880	880	720
22	870	890	850	850	1000	900	1000	950	900	880	880	800
23	870	890	850	820	980	950	1010	930	870	880	880	820
24	870	900	880	900	990	950	1010	920	890	900	860	820
25	880	910	1000	800	940	1000	1010	940	910	930	850	820
26	880	900	880	820	--	950	990	--	880	950	850	820
27	860	910	850	780	1100	1000	1010	--	880	880	880	850
28	870	900	800	850	1100	1000	1000	900	920	880	800	820
29	860	900	900	850	--	1050	1020	900	880	880	800	820
30	850	900	820	820	--	1000	1020	950	880	850	720	800
31	850	--	880	880	--	1000	--	900	--	--	700	--
AVG	860	890	920	850	--	1000	1000	960	880	860	850	770

09380000 COLORADO RIVER AT LEES FERRY, ARIZ.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.0	15.0	12.0	--	8.0	6.0	--	--	9.0	11.0	12.5	14.0
2	16.0	14.0	12.0	9.0	8.0	5.0	--	--	9.0	11.0	12.0	14.0
3	15.0	14.0	12.0	8.0	8.0	8.0	9.0	--	10.5	12.0	14.0	14.0
4	15.0	14.0	11.0	8.0	8.0	8.0	8.5	--	9.5	12.0	11.0	14.0
5	15.0	15.0	11.0	9.0	8.0	8.5	8.5	10.0	14.5	11.0	11.0	12.0
6	15.0	14.0	11.0	8.0	8.0	8.5	9.0	9.0	10.0	10.0	11.0	12.0
7	14.0	14.0	11.0	8.0	8.0	--	9.0	9.0	14.0	12.0	--	13.0
8	14.0	14.0	11.0	8.0	8.0	8.0	9.0	9.0	13.0	15.0	13.5	13.0
9	14.0	14.0	11.0	8.0	8.0	8.0	9.0	9.0	10.0	14.0	14.0	13.0
10	15.0	13.0	11.0	8.0	8.0	8.0	9.0	9.0	10.0	12.0	12.0	13.0
11	17.0	14.0	11.0	8.0	8.0	8.0	--	9.0	14.0	11.0	15.0	12.0
12	18.0	14.0	10.0	8.0	9.0	8.0	9.0	9.0	11.0	11.0	13.0	11.5
13	15.0	14.0	10.0	8.0	--	8.0	9.5	9.5	11.0	11.0	12.0	14.0
14	15.0	14.0	10.0	8.0	--	8.0	9.5	9.0	11.0	11.0	13.0	14.0
15	15.0	14.0	10.0	8.0	--	8.0	9.5	9.0	11.0	12.0	13.5	14.0
16	15.0	14.0	11.0	--	9.0	8.0	10.0	9.5	11.0	12.0	13.5	14.0
17	16.0	14.0	10.0	--	8.0	6.0	--	8.5	11.5	12.0	13.0	14.0
18	16.0	13.0	11.0	--	9.0	8.0	9.0	10.0	10.5	12.0	13.0	13.5
19	15.0	13.0	10.0	8.0	8.0	--	9.0	10.0	14.0	12.5	11.0	13.5
20	16.0	13.0	10.0	8.0	--	--	9.5	10.0	11.0	12.5	11.5	13.5
21	15.0	13.0	10.0	8.0	9.0	--	10.0	9.5	14.0	11.5	11 0	14.5
22	14.0	13.0	10.0	8.0	7.0	8.0	9.5	9.5	17.0	11.0	11.0	13.5
23	14.0	14.0	10.0	8.0	8.5	8.0	9.0	9.0	15.0	11.0	11.0	13.5
24	15.0	14.0	10.0	8.0	8.5	9.0	9.0	9.5	13.0	12.0	12.5	12.5
25	15.0	12.0	10.0	8.0	7.0	9.0	9.0	9.5	12.0	14.0	12.0	12.0
26	13.0	12.0	10.0	8.0	--	9.0	9.0	--	10.0	13.0	12.0	11.0
27	13.0	12.0	10.0	8.0	6.5	9.0	9.0	--	10.0	13.0	11.0	11.0
28	14.0	12.0	10.0	7.0	6.5	9.0	9.5	11.0	12.0	13.0	17.0	13.0
29	14.0	13.0	10.0	7.0	--	9.0	9.5	10.0	10.0	14.5	17.0	11.0
30	15.0	12.0	10.0	8.0	--	8.5	9.5	9.0	11.0	14.0	14.0	10.5
31	15.0	--	9.0	7.0	--	9.0	--	9.0	--	--	14.0	--
AVG	15.0	13.5	10.5	8.0	--	8.0	9.0	9.5	11.5	12.0	12.5	13.0

PERIODIC DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	MEAN DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)
OCT.			
02...	9290	12	301
07...	7860	16	340
12...	9780	21	555
22...	11600	15	470
28...	6300	35	595
NOV.			
06...	7360	30	596
09...	6210	47	788
16...	8730	14	330
24...	11400	24	739
30...	6590	37	658
DEC.			
10...	10900	42	1240
15...	13500	33	1200
20...	9390	13	330
31...	10000	5	135
JAN.			
04...	15600	6	253
15...	8690	11	258
20...	6290	1450	24600
29...	3920	1950	20600
FEB.			
04...	7710	3000	62500
11...	7970	283	6090
MAR.			
02...	14700	492	19500
10...	9500	3640	93400

DATE	MEAN DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)
APR.			
02...	18600	1470	73800
MAY			
05...	16600	14	627
27...	17400	13	611
JUNE			
02...	15400	3	125
05...	11000	15	445
12...	10000	9	243
17...	17600	15	713
22...	17500	19	898
JULY			
01...	17100	8	369
10...	16400	110	4870
17...	16300	9	396
24...	13400	11	398
AUG.			
02...	14000	15	567
05...	14700	6	238
11...	14900	16	644
16...	16300	13	572
23...	16300	149	6560
28...	13600	540	19800
SEP.			
01...	16700	138	6220
07...	14300	10	386
14...	17600	14	665
23...	12000	11	356

09382000 PARIA RIVER AT LEES FERRY, ARIZ.

LOCATION.--Lat 36°52'20", long 111°35'38", in NW¼NE¼ sec. 13, T. 40 N., R. 7 E., Coconino County, at gaging station 0.6 mile northwest of Lees Ferry, and 1.1 miles upstream from mouth.

DRAINAGE AREA.--1,410 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1947 to February 1950, October 1969 to September 1971 (partial-record station).
Specific conductance: October 1964 to September 1971.
Water temperatures: October 1956 to September 1971.
Sediment records: October 1947 to September 1971.

EXTREMES.--1970-71:
Specific conductance: Maximum daily, 4,750 micromhos July 19; minimum daily, 480 micromhos June 15.
Water temperatures: Maximum, 37.0°C July 17; minimum, freezing point on Dec. 26, Jan. 3-6, 8-11.
Sediment concentrations: Maximum daily, 276,000 mg/l Aug. 24; minimum daily, 2 mg/l July 17.
Sediment discharge: Maximum daily, 378,000 tons Aug. 23; minimum daily, 0.01 ton July 17.

Period of record:
Specific conductance: Maximum daily, 4,750 micromhos July 19, 1971; minimum daily, 320 micromhos May 21, 1967.
Water temperatures (1956-61, 1965-71): Maximum, 37.0°C July 17, 1971; minimum, freezing point on many days during winter months.
Sediment concentrations: Maximum daily, 780,000 mg/l Aug. 9, 1968; minimum daily, 1 mg/l June 1-10, 1950.
Sediment discharge: Maximum daily, 5,100,000 tons Sept. 12, 1958; minimum daily, 0 tons on many days of most years.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)
OCT. 19...	1315	8.2	--	--	83	35	63	5.1	172	0	310	20
JAN. 11...	1310	40	12	110	49	20	27	2.8	147	0	130	10
APR. 28...	1115	1.6	11	40	57	31	61	7.8	154	0	250	22
JULY 30...	1400	1.4	15	10	110	29	43	5.6	142	0	350	14
AUG. 26...	0946	7.6	16	--	250	73	100	12	231	0	930	12

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
OCT. 19...	--	--	--	654	--	.89	350	210	1.5	938	7.9	18.5
JAN. 11...	.2	2.5	50	--	330	.45	200	79	.8	513	7.8	0.0
APR. 28...	.2	.90	80	522	520	.71	270	140	1.6	802	7.8	17.5
JULY 30...	.3	1.4	100	664	643	.90	390	280	.9	930	7.4	32.0
AUG. 26...	.5	.45	--	1490	1510	2.03	920	730	1.4	1900	7.6	23.0

09382000 PARIA RIVER AT LEES FERRY, ARIZ.--Continued

FIELD DETERMINATIONS OF WATER QUALITY, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	AIR TEMP-ERATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)
OCT.							
19...	1315	8.2	1000	7.0	18.5	24.5	8.0
JAN.							
11...	1310	40	550	--	0.0	10.0	9.8
APR.							
28...	1115	1.6	800	7.0	17.5	22.0	8.6
JULY							
30...	1400	1.4	1000	7.0	32.0	33.5	6.4

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	650	1400	1000	---	1400	---	1100	---	550	520	875	1700
2	650	1200	1300	1500	---	1150	1000	---	550	525	875	2600
3	650	1200	1400	1500	1400	---	1000	---	570	510	1650	1700
4	600	1100	1300	1900	1000	1200	1000	---	570	520	1170	1100
5	600	1200	1400	1600	1000	1200	1000	---	540	---	2400	1150
6	600	1200	1300	1700	1500	900	1000	1180	540	550	1600	1190
7	650	1350	1200	1500	1500	---	1000	1180	540	525	---	1050
8	650	1500	1300	850	---	1300	1000	910	560	575	1320	950
9	700	1700	1300	800	1300	1200	1000	1150	550	560	1950	800
10	600	1900	1200	600	1200	1200	1000	1590	530	525	2900	650
11	---	1800	1300	600	1000	1200	---	1600	630	510	1800	650
12	800	1500	1250	---	---	1200	---	1600	575	550	1500	625
13	800	1400	1400	650	---	1000	---	640	580	530	1400	600
14	850	1400	1400	1600	---	1400	575	550	540	520	2500	600
15	850	1400	1800	1600	---	1400	600	540	480	525	2500	590
16	850	1300	1700	---	1200	1300	620	525	505	525	1650	590
17	950	1300	1600	---	1200	1200	620	525	510	500	1250	600
18	800	1200	1200	---	1200	1200	620	520	510	2700	1100	600
19	950	1100	1150	1400	1000	---	550	520	500	4750	2000	590
20	700	1100	1150	1400	---	---	550	520	500	2350	1420	625
21	800	1200	1500	1300	---	---	1000	520	510	1500	2650	575
22	900	1600	1500	1300	---	1200	1100	520	500	3420	2400	560
23	600	1400	1400	1300	---	1200	1100	520	520	2600	2600	550
24	750	1500	1200	1200	---	---	1100	520	---	2900	2200	575
25	750	1400	1200	1200	---	1000	1100	520	---	2300	1300	575
26	800	1500	1200	1300	---	1100	1100	---	---	2000	1650	575
27	950	1650	900	1000	---	1200	1100	550	---	---	1900	575
28	1000	1500	900	1300	---	875	1150	590	---	1400	1800	575
29	1200	1300	1000	1300	---	1200	1150	620	520	1100	1100	620
30	1200	1400	1500	1300	---	---	1180	580	520	1000	2720	625
31	1100	---	1500	1300	---	---	---	550	---	---	1250	---
AVG	798	1390	1310	1270	---	---	938	762	536	1300	1780	826

09382000 PARIA RIVER AT LEES FERRY, ARIZ.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.0	14.0	5.0	---	3.0	---	9.0	---	22.0	32.0	30.0	23.0
2	23.0	8.0	4.0	2.0	---	7.0	12.0	---	23.0	22.0	31.0	20.0
3	18.0	6.0	4.0	0.0	3.0	---	11.0	---	19.5	25.0	24.0	20.0
4	24.0	10.0	3.0	0.0	5.0	3.0	13.0	---	12.0	28.0	25.0	16.0
5	24.0	8.0	1.0	0.0	3.0	4.0	14.0	---	25.0	---	28.0	26.0
6	20.0	10.0	6.0	0.0	5.0	1.0	14.0	14.0	27.0	23.0	28.0	19.0
7	17.0	11.0	7.0	1.0	7.0	---	14.0	14.0	28.0	31.0	---	19.0
8	12.0	11.0	5.0	0.0	---	7.0	15.0	14.0	25.0	25.0	26.0	21.0
9	11.0	11.0	4.0	0.0	6.0	7.0	15.0	14.0	27.0	26.5	26.5	20.0
10	12.0	8.0	3.0	0.0	6.0	8.0	15.0	14.0	27.0	27.0	22.5	21.0
11	---	11.0	2.0	0.0	8.0	6.0	13.0	14.0	21.0	27.0	28.5	21.0
12	18.0	8.0	3.0	---	---	8.0	14.0	14.0	22.5	28.0	26.0	20.0
13	19.0	7.0	5.0	2.0	---	5.0	14.0	14.0	26.0	27.0	26.5	27.0
14	19.0	5.0	1.0	3.0	---	5.0	14.0	14.0	27.0	26.0	25.0	23.0
15	19.0	5.0	7.0	2.0	---	6.0	12.0	14.0	27.0	30.0	26.5	18.0
16	19.0	4.0	3.0	---	9.0	6.0	---	15.0	26.0	28.0	26.0	26.5
17	15.0	9.0	7.0	---	10.0	7.0	14.0	15.0	25.5	37.0	24.5	19.5
18	14.0	6.0	8.0	---	10.0	7.0	14.0	15.0	30.0	28.5	23.0	20.0
19	17.0	9.0	1.0	3.0	10.0	---	14.0	14.0	30.0	25.5	25.0	20.0
20	17.0	2.0	5.0	3.0	---	---	14.0	15.0	29.0	26.0	25.0	18.0
21	17.0	2.0	5.0	3.0	---	---	14.0	15.0	27.5	26.0	22.0	20.0
22	15.0	4.0	4.0	3.0	---	14.0	13.0	15.0	25.0	26.5	25.0	21.0
23	15.0	9.0	5.0	5.0	---	18.0	13.0	15.0	28.0	27.0	23.0	20.0
24	11.0	6.0	6.0	4.0	---	---	13.0	15.0	---	25.0	22.0	19.0
25	13.0	8.0	5.0	6.0	---	14.0	12.0	15.0	---	27.0	23.0	16.0
26	8.0	8.0	0.0	3.0	---	14.0	13.0	---	---	24.0	22.5	17.0
27	8.0	7.5	2.0	2.0	---	14.0	14.0	25.0	---	---	26.0	23.0
28	12.0	6.0	1.0	4.0	---	14.0	14.0	22.0	---	24.5	26.0	20.0
29	8.0	9.0	3.0	2.0	---	14.0	14.0	15.0	32.0	28.0	26.0	---
30	13.0	8.0	5.0	4.0	---	---	14.0	22.0	28.0	25.5	23.0	19.0
31	15.0	---	7.0	4.0	---	---	---	19.0	---	---	22.0	---
AVG	15.5	7.5	4.0	2.0	---	---	13.5	15.5	25.5	27.0	25.5	20.5

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	6.0	13	.21	12	252	8.2	72	28300	6030
2	5.5	12	.18	11	144	4.3	40	16400	1770
3	5.5	26	.39	8.8	116	2.8	29	15100	1180
4	5.5	21	.31	8.8	84	2.0	24	7300	473
5	4.0	16	.17	8.8	95	2.3	22	1700	101
6	5.0	6	.08	9.4	108	2.7	22	1140	68
7	5.0	18	.24	14	1050	40	22	1090	65
8	6.5	24	.42	27	4200	402	22	750	45
9	8.2	43	.95	26	7100	498	22	740	44
10	7.0	62	1.2	21	5650	320	25	680	46
11	7.0	40	.76	20	1200	65	23	560	35
12	7.6	24	.49	18	3200	156	17	530	24
13	8.2	26	.58	18	1050	51	18	630	31
14	6.5	38	.67	15	234	9.5	24	720	47
15	5.5	40	.59	8.8	224	5.3	25	770	52
16	6.0	36	.58	6.5	146	2.6	28	650	49
17	7.0	17	.32	5.0	146	2.0	33	846	76
18	6.5	40	.70	11	1200	36	33	800	71
19	6.0	20	.32	13	1000	35	23	550	34
20	6.5	30	.53	8.8	450	11	12	340	11
21	5.0	26	.35	7.0	500	9.5	19	737	53
22	6.5	34	.60	6.0	625	10	30	860	70
23	7.0	20	.38	12	590	19	24	550	36
24	7.0	34	.64	18	590	29	12	170	5.5
25	7.0	48	.91	18	410	20	7.6	140	2.9
26	9.4	50	1.3	18	250	12	2.2	140	.83
27	12	132	4.3	85	37300	9860	5.0	200	2.7
28	8.2	142	3.1	44	17800	2110	7.2	250	4.9
29	6.5	118	2.1	26	15100	1060	14	260	9.8
30	12	100	3.2	72	16000	4780	13	697	37
31	12	214	6.9	--	--	--	16	711	31
TOTAL	217.6	--	33.47	576.9	--	19565.2	686.0	--	10505.63

09382000 PARIA RIVER AT LEES FERRY, ARIZ. --Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN D.SCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SFDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	19	485	29	30	900	73	12	400	13
2	16	225	10	28	1100	83	13	620	26
3	12	270	8.7	25	1240	84	9.8	628	21
4	17	370	17	20	870	47	26	3610	256
5	5.5	240	3.6	11	550	16	39	3320	349
6	5.0	235	3.2	17	850	39	33	3260	290
7	4.5	145	1.8	21	1370	78	22	3430	204
8	4.5	115	1.4	16	950	41	24	3300	212
9	4.0	99	1.1	16	850	37	27	1580	117
10	3.5	107	1.0	17	920	42	24	1640	106
11	3.5	63	.60	18	1000	49	26	2480	175
12	3.5	65	.61	20	940	51	29	2450	192
13	3.5	68	.64	17	720	33	26	3440	241
14	3.5	265	2.5	18	590	29	32	3490	302
15	10	285	7.7	18	460	22	21	3600	204
16	30	250	20	19	370	19	18	4420	215
17	33	250	22	19	450	23	16	2200	95
18	31	250	21	22	470	28	17	1140	52
19	41	650	72	24	600	39	15	990	40
20	68	4220	924	29	700	55	18	1050	51
21	112	7600	2300	32	800	69	18	730	35
22	71	7050	1380	28	700	53	17	520	24
23	41	2850	298	24	600	39	16	560	24
24	31	2230	224	23	600	37	17	590	27
25	27	1880	143	20	400	22	16	750	32
26	26	750	53	21	500	28	14	1440	54
27	28	777	59	17	400	18	11	1410	42
28	29	690	54	9.4	300	7.6	12	1630	53
29	31	840	70	--	--	--	12	1300	42
30	28	910	69	--	--	--	10	930	25
31	28	920	70	--	--	--	12	1340	43
TOTAL	770.0	--	5867.85	579.4	--	1161.6	602.8	--	3562

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	8.8	2800	67	5.0	300	4.1	4.5	9	.11
2	8.8	2560	61	5.0	300	4.1	5.0	10	.14
3	9.4	2330	59	4.0	200	2.2	3.4	11	.10
4	9.4	1640	42	3.7	100	1.0	5.4	12	.17
5	8.8	790	19	5.0	300	4.1	3.2	8	.07
6	9.4	340	8.6	5.5	19000	282	4.5	8	.10
7	8.8	352	8.4	6.0	20700	335	2.5	9	.06
8	8.8	494	12	7.0	20400	386	3.2	7	.06
9	6.0	240	3.9	11	16100	477	2.8	5	.04
10	5.0	162	2.2	24	6500	421	2.8	6	.05
11	4.0	56	.60	19	5020	258	4.0	5	.05
12	4.0	42	.45	15	4600	186	3.6	5	.05
13	3.6	40	.39	10	2000	54	5.0	5	.07
14	3.6	43	.42	8.2	2200	49	4.5	5	.06
15	4.0	20	.22	5.5	2300	34	2.8	5	.04
16	3.6	82	.80	4.0	117	1.3	2.2	3	.02
17	3.2	24	.21	3.2	629	5.4	2.5	5	.03
18	3.6	24	.23	3.6	20	.19	2.5	5	.03
19	3.2	57	.49	4.0	21	.23	3.2	12	.10
20	3.2	70	.60	5.5	126	1.9	4.0	6	.06
21	3.6	41	.40	3.6	515	5.0	4.0	6	.06
22	4.0	77	.83	4.5	29	.35	2.8	12	.09
23	5.0	77	1.0	6.5	23	.40	2.2	5	.03
24	10	151	4.1	6.5	28	.49	2.2	6	.04
25	8.2	76	1.7	6.0	30	.49	3.2	10	.09
26	5.0	59	.80	4.5	35	.43	2.2	13	.08
27	4.5	326	4.0	3.2	40	.35	2.5	14	.09
28	4.5	720	8.7	3.6	23	.22	2.2	14	.08
29	5.0	55	.74	5.0	19	.26	3.6	11	.11
30	5.0	288	3.9	6.5	20	.35	3.2	15	.13
31	--	--	--	5.5	14	.21	--	--	--
TOTAL	174.0	--	313.68	209.6	--	2515.07	99.7	--	2.21

09382000 PARIA RIVER AT LEES FERRY, ARIZ. --Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	3.5	10	.09	2.8	590	4.5	53	65500	9370
2	3.6	10	.10	6.9	1390	26	28	52000	3930
3	4.5	5	.06	9.7	25500	957	18	32200	1570
4	4.0	5	.05	8.0	57200	1240	13	7000	246
5	3.6	5	.05	8.2	64000	1420	12	1600	52
6	3.6	5	.05	126	68000	27100	12	910	29
7	4.0	6	.06	230	87000	70900	12	640	21
8	6.0	16	.26	29	74600	5810	8.8	510	12
9	4.5	7	.09	39	72000	7940	8.8	340	8.1
10	3.6	6	.06	14	97500	3690	7.6	260	5.3
11	2.5	5	.03	7.0	64500	1220	7.0	240	4.5
12	2.5	7	.05	3.6	50400	490	7.6	150	3.1
13	2.2	75	.45	17	52700	2440	8.2	100	2.2
14	2.5	4	.03	7.1	54600	1050	7.6	121	2.5
15	2.2	4	.02	2.5	51500	348	7.6	110	2.3
16	2.5	3	.02	1.9	26500	136	5.0	112	1.5
17	2.2	2	.01	2.5	4000	27	6.5	96	1.7
18	76	78800	31700	19	34900	2960	5.0	105	1.4
19	36	91100	10800	24	96500	6260	6.5	100	1.8
20	7.6	12500	257	60	146000	30800	7.6	98	2.0
21	14	4000	151	492	214000	320000	7.6	76	1.6
22	122	104000	49100	68	183000	33600	7.6	80	1.6
23	135	254000	157000	427	252000	378000	7.6	107	2.2
24	31	66600	5570	349	276000	318000	8.8	76	1.8
25	10	37600	1020	71	143000	28700	8.8	67	1.6
26	6.5	20900	367	538	167000	291000	8.2	70	1.5
27	2.5	5500	37	101	99200	29800	8.8	70	1.7
28	2.8	1200	9.1	132	123000	51000	8.8	63	1.5
29	1.4	710	2.7	135	181000	65800	9.4	170	4.3
30	1.4	580	2.2	131	229000	191000	12	197	6.4
31	1.4	510	1.9	211	141000	88100	--	--	--
TOTAL	505.1	--	256019.38	3273.2	--	1959818.5	329.4	--	15290.6

TOTAL DISCHARGE FOR YEAR (CFS-DAYS)	8023.7
TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS)	2274655.19

09382000 PARIA RIVER AT LEES FERRY, ARIZ. --Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971
(ANALYSES MADE IN DISTILLED WATER EXCEPT AS NOTED; N, IN NATIVE WATER)

DATE	TIME	TEMPERATURE (DEG C)	DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. PERCENT FINER THAN .002 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .004 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .008 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .016 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .031 MM
DEC. 30...	1525	5.0	31	1440	121	48	57	--	78	--
AUG. 25...	0945	23.0	52	131000	18400	49	67	78	92	99

DATE	SUS. SED. FALL DIAM. PERCENT FINER THAN .062 MM	SUS. SED. SIEVE DIAM. PERCENT FINER THAN .062 MM	SUS. SED. SIEVE DIAM. PERCENT FINER THAN .125 MM	SUS. SED. SIEVE DIAM. PERCENT FINER THAN .250 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .002 MM (N)	SUS. SED. FALL DIAM. PERCENT FINER THAN .004 MM (N)	SUS. SED. FALL DIAM. PERCENT FINER THAN .008 MM (N)	SUS. SED. FALL DIAM. PERCENT FINER THAN .016 MM (N)	SUS. SED. FALL DIAM. PERCENT FINER THAN .031 MM (N)
DEC. 30...	--	93	98	100	--	--	--	--	--
AUG. 25...	100	--	--	--	1	2	4	91	100

PARTICLE-SIZE DISTRIBUTION OF BED MATERIAL, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	TEMPERATURE (DEG C)	DISCHARGE (CFS)	BED MAT. SIEVE DIAM. PERCENT FINER THAN .062 MM	BED MAT. SIEVE DIAM. PERCENT FINER THAN .125 MM	BED MAT. SIEVE DIAM. PERCENT FINER THAN .250 MM	BED MAT. SIEVE DIAM. PERCENT FINER THAN .500 MM	BED MAT. SIEVE DIAM. PERCENT FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. PERCENT FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. PERCENT FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. PERCENT FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. PERCENT FINER THAN 16.0 MM
MAY 27...	1230	25.0	5.0	12	26	53	74	78	84	93	98	100

09402500 COLORADO RIVER NEAR GRAND CANYON, ARIZ.

LOCATION.--Lat 36°06'05", long 112°05'08", in sec. 5, T. 31 N., R. 3 E. (unsurveyed), Coconino County, at lower gaging station in Grand Canyon National Park, upstream from Kaibab Bridge, 0.4 mile upstream from Bright Angel Creek, 4.5 miles northeast of village of Grand Canyon, 26 miles downstream from Little Colorado River, 104 miles downstream from Glen Canyon Dam, and 267 miles upstream from Hoover Dam.

DRAINAGE AREA.--137,800 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: August 1925 to November 1942, September 1943 to September 1971.
Water temperatures: October 1936 to October 1942, September 1943 to September 1971.
Sediment records: October 1925 to November 1942, September 1943 to September 1971.

EXTREMES.--1970-71:
Specific conductance: Maximum daily, 1,200 micromhos Feb. 1, 2; minimum daily, 700 micromhos Jan. 2.
Water temperatures: Maximum, 16.0°C Oct. 1-7, Aug. 26-29; minimum, 7.0°C Jan. 5.
Sediment concentrations: Maximum daily, 30,000 mg/l Aug. 28; minimum daily, 8 mg/l Feb. 9.
Sediment discharge: Maximum daily, 1,830,000 tons Aug. 28; minimum daily, 103 tons Feb. 1.

Period of record:
Specific conductance: Maximum daily, 1,570 micromhos Jan. 30, 1968; minimum daily, 561 micromhos Sept. 3, 1965.
Water temperatures: Maximum, 23.0°C Sept. 4, 1967, Sept. 9, 10, 1968; minimum, 4.0°C Jan. 4, 1966, Jan. 7, 1968.
Sediment concentrations: Maximum daily, 47,100 mg/l Sept. 7, 1970; minimum daily, 4 mg/l Nov. 7, 1966.
Sediment discharge: Maximum daily, 1,830,000 tons Aug. 28, 1971; minimum daily, 55 tons Nov. 7, 1966, Jan. 26, 1970.

REMARKS.--Because of the regulation of flow by Glen Canyon Dam since Mar. 13, 1963, and the subsequent filling of Lake Powell, extreme values for the period of record include only those obtained after July 31, 1965.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)
OCT.								
01-31	--	8810	9.0	--	72	27	99	--
NOV.								
01-30	--	8110	8.2	--	72	23	--	102
DEC.								
29...	1320	20000	10	50	68	27	91	--
JAN.								
15...	1145	11500	9.0	90	66	23	90	--
FEB.								
16...	1010	5800	8.4	150	64	27	100	--
MAR.								
15...	1230	9220	8.5	100	73	27	98	--
APR.								
23...	1045	18000	10	40	84	28	120	--
MAY								
21...	1215	15700	10	220	78	27	91	--
JUNE								
21...	0850	12400	9.1	20	70	24	89	--
AUG.								
30...	0805	7390	13	20	79	19	84	--

09402500 COLORADO RIVER NEAR GRAND CANYON, ARIZ. --Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED NITRITE PLUS NITRATE (N) (MG/L)	DISSOLVED ORTHO PHOSPHATE (PO4) (MG/L)	DISSOLVED BORON (B) (UG/L)
OCT.									
01-31	3.8	164	2	234	90	.3	.74	--	160
NOV.									
01-30	--	159	2	228	88	--	.59	--	--
DEC.									
29...	4.1	166	0	230	63	.5	1.2	--	110
JAN.									
15...	4.3	163	0	220	80	.3	1.1	--	100
FEB.									
16...	4.3	171	0	210	96	.3	.00	.05	90
MAR.									
15...	3.9	179	0	250	82	.3	.50	--	100
APR.									
23...	5.9	172	0	300	94	.3	.70	--	100
MAY									
21...	4.1	175	0	250	72	.3	.87	--	130
JUNE									
21...	3.7	171	0	220	76	.3	.79	--	100
AUG.									
30...	5.8	231	0	230	58	.6	.85	--	190

DATE	DISSOLVED SOLIDS (RESIDUE AT 180°C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT.								
01-31	617	620	.84	292	154	2.5	994	8.3
NOV.								
01-30	626	602	.85	276	142	2.7	973	8.3
DEC.								
29...	--	580	.79	280	144	2.4	927	8.2
JAN.								
15...	--	570	.78	260	126	2.4	917	7.7
FEB.								
16...	--	600	.82	270	130	2.6	906	8.0
MAR.								
15...	--	633	.86	290	150	2.5	978	8.4
APR.								
23...	--	730	.99	320	180	2.9	1072	8.0
MAY								
21...	--	623	.85	310	160	2.3	972	7.9
JUNE								
21...	--	580	.79	270	130	2.3	941	8.1
AUG.								
30...	--	607	.83	280	86	2.2	984	7.2

COLORADO RIVER MAIN STEM

09402500 COLORADO RIVER NEAR GRAND CANYON, ARIZ. --Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	960	960	950	1000	1200	1100	1100	1000	980	900	880	920
2	950	970	950	700	1200	1000	1000	1000	950	920	900	900
3	990	1130	1000	1050	1000	1000	1000	1050	920	900	880	900
4	1030	1020	950	920	950	1000	1000	1000	920	920	880	880
5	990	960	1000	1000	1000	1000	1000	900	980	900	880	900
6	1010	960	1000	1000	1000	1000	1000	980	950	900	980	1000
7	1020	940	950	750	1000	1000	1000	950	980	920	880	1030
8	1020	940	1000	950	900	1150	1000	1000	980	900	900	900
9	1000	950	1000	900	1000	1000	1000	1100	920	900	1020	850
10	1030	1110	1000	1000	1100	1100	1000	1000	920	900	---	880
11	990	970	900	900	1000	1100	1000	950	920	---	1000	900
12	960	990	900	1000	1000	1000	1000	950	900	920	920	900
13	980	960	1000	1000	1000	1000	950	980	900	900	---	900
14	990	990	900	900	1000	1100	1000	1000	950	880	900	850
15	---	960	950	950	1000	1000	1000	980	900	900	900	---
16	---	1010	900	1000	1000	1050	1000	1000	900	900	950	880
17	---	1100	850	920	1000	1100	1000	1050	900	880	880	900
18	---	930	850	980	1050	1100	1000	950	900	900	950	900
19	960	880	900	1050	1050	1100	1050	950	900	900	900	920
20	1050	890	1000	920	1000	---	1000	980	900	900	900	920
21	960	870	1000	920	1100	---	1000	980	900	900	900	1000
22	950	960	950	950	1000	---	1020	1000	900	900	1000	920
23	1000	960	900	950	1100	1100	1050	1000	900	900	950	880
24	980	950	950	900	1100	1100	1000	1000	900	900	1020	900
25	980	930	1000	920	1050	1050	1050	920	920	900	1000	900
26	1000	980	920	1150	1000	1050	1050	920	---	900	950	900
27	1060	960	1100	950	980	1050	1020	950	950	---	1100	900
28	990	1030	1000	920	1100	1000	1000	980	920	900	1020	900
29	1000	960	900	900	---	1050	1000	980	900	920	980	900
30	980	980	850	980	---	1000	1000	980	900	900	890	900
31	1040	---	900	1000	---	1100	---	1000	---	900	900	---
AVG	995	973	949	949	1030	1050	1010	983	923	902	938	908

09402500 COLORADO RIVER NEAR GRAND CANYON, ARIZ.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	16.0	15.5	14.0	14.0	11.5	11.5	10.0	9.5	9.5	8.5	8.5	8.5
2	16.0	16.0	14.0	14.0	11.5	11.5	10.0	9.5	9.5	9.0	8.5	8.0
3	16.0	15.5	14.0	14.0	11.5	10.5	9.5	9.0	9.5	9.0	8.5	8.5
4	16.0	15.5	14.0	13.5	10.5	10.5	9.0	8.0	9.0	8.0	9.0	8.5
5	16.0	16.0	14.0	13.5	11.0	10.5	8.0	7.0	8.5	8.0	9.0	9.0
6	16.0	16.0	14.0	14.0	11.0	11.0	8.5	8.0	8.5	8.0	9.0	8.5
7	16.0	15.5	14.0	14.0	11.0	10.5	8.5	8.5	8.5	8.5	9.0	8.5
8	15.5	14.5	14.0	14.0	11.0	10.5	8.5	8.5	9.0	8.5	9.0	8.5
9	14.5	14.0	14.0	14.0	11.0	11.0	8.5	8.5	9.0	8.5	9.0	9.0
10	14.0	14.0	14.0	13.5	11.5	11.0	8.5	8.5	9.5	8.5	9.5	9.0
11	15.0	14.0	13.5	12.0	11.5	11.0	8.5	8.5	9.0	8.5	9.5	9.5
12	15.0	15.0	13.5	13.0	11.0	10.5	8.5	8.5	9.5	9.0	10.0	9.5
13	15.0	15.0	13.5	13.0	10.5	10.5	8.5	8.5	9.5	9.0	10.0	9.5
14	15.0	15.0	13.0	13.0	10.5	10.5	8.5	8.5	9.5	9.5	9.5	9.5
15	15.0	15.0	13.0	12.0	10.5	10.0	8.5	8.5	9.5	9.5	9.5	9.0
16	15.0	15.0	12.0	11.5	10.5	10.5	8.5	8.5	9.5	9.5	10.0	9.0
17	15.0	14.5	12.0	11.5	10.5	10.5	8.5	8.5	9.5	9.5	10.0	10.0
18	15.0	15.0	13.0	12.0	10.5	10.5	8.5	8.5	9.5	9.5	10.0	9.5
19	15.0	15.0	13.0	13.0	10.5	10.5	9.0	8.5	9.5	9.5	9.5	9.5
20	15.0	15.0	13.0	13.0	10.5	10.0	9.0	9.0	9.5	9.0	9.5	9.5
21	15.0	15.0	13.0	13.0	10.0	10.0	9.0	9.0	9.0	8.5	10.0	9.5
22	15.0	15.0	13.0	12.0	10.0	10.0	9.5	9.0	9.0	8.5	10.5	10.0
23	15.0	14.5	13.0	12.0	10.5	10.0	9.0	8.5	9.0	8.5	10.5	10.5
24	14.5	14.0	13.0	13.0	10.5	10.0	9.0	8.5	9.5	9.0	10.5	10.5
25	14.0	14.0	13.0	13.0	10.0	10.0	8.5	8.5	9.5	9.0	11.0	10.5
26	14.0	13.5	13.0	12.0	10.0	9.5	8.5	8.5	9.5	8.5	11.5	10.5
27	13.5	13.0	12.0	12.0	9.5	9.5	8.5	8.5	9.0	8.5	11.5	11.5
28	13.0	12.0	12.0	12.0	9.5	9.5	9.0	8.5	8.5	8.5	11.5	11.0
29	13.0	13.0	12.0	12.0	9.5	9.5	9.0	8.5	---	---	11.0	11.0
30	13.0	13.0	12.0	11.5	10.0	9.5	9.0	8.5	---	---	11.0	10.5
31	14.0	13.0	---	---	10.0	10.0	9.0	8.5	---	---	10.5	10.5
MONTH	16.0	12.0	14.0	11.5	11.5	9.5	10.0	7.0	9.5	8.0	11.5	8.0

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	10.5	10.0	10.5	10.5	11.0	10.5	12.0	11.5	14.0	14.0	14.0	13.5
2	10.5	9.5	10.5	10.5	11.0	11.0	12.0	11.5	14.5	14.0	15.0	13.5
3	10.0	9.5	11.0	10.5	11.0	10.5	13.0	12.0	14.0	14.0	15.0	14.0
4	10.0	9.5	11.0	10.5	11.0	10.5	13.0	13.0	14.0	13.5	14.5	14.0
5	10.0	9.5	10.5	10.0	11.0	10.5	13.5	13.0	14.5	14.0	14.0	14.0
6	10.0	9.5	10.0	9.5	11.5	11.0	13.5	13.5	14.0	13.5	14.5	14.0
7	10.5	9.5	10.0	9.5	13.0	11.5	13.5	12.0	14.0	13.5	15.0	14.5
8	10.5	9.5	10.0	9.5	13.0	12.0	13.0	12.0	14.0	13.5	15.0	14.5
9	10.5	9.5	10.5	10.0	12.0	12.0	13.5	13.0	15.0	14.0	14.5	14.0
10	10.5	10.0	10.5	10.5	12.0	12.0	13.5	13.0	15.0	14.5	14.0	13.5
11	10.5	10.0	10.5	10.5	12.0	11.5	13.5	13.0	14.5	14.0	14.0	14.0
12	10.5	10.5	10.5	10.5	11.5	11.5	13.5	13.0	14.5	13.5	14.0	13.5
13	10.5	10.0	10.5	10.0	12.0	11.5	13.5	13.0	14.0	13.5	14.0	13.5
14	10.5	10.0	11.0	10.5	13.0	12.0	13.5	12.0	14.0	14.0	14.0	13.5
15	10.0	10.0	10.5	10.5	13.0	13.0	13.5	13.0	14.0	13.5	14.0	13.5
16	11.0	10.0	11.0	10.5	13.0	11.5	14.0	13.5	14.0	13.5	14.0	13.5
17	11.0	10.5	11.0	11.0	12.0	11.5	14.0	13.0	14.0	13.5	14.0	13.0
18	11.0	10.0	11.0	10.5	12.0	11.0	14.0	13.0	14.0	13.5	13.5	13.0
19	10.5	10.0	10.5	10.0	11.5	11.0	14.0	13.5	14.0	13.0	13.0	13.0
20	10.0	9.5	10.5	10.0	12.0	11.5	14.0	13.5	13.5	13.0	14.0	13.0
21	10.0	9.5	11.0	10.5	12.0	12.0	13.5	13.0	---	---	14.0	14.0
22	10.0	9.5	11.0	10.5	12.0	12.0	13.5	13.0	---	---	14.0	13.5
23	10.0	9.5	10.5	10.0	13.0	11.5	13.5	12.0	---	---	13.5	13.5
24	10.0	10.0	11.0	10.0	12.0	11.5	13.5	13.0	15.5	15.0	13.5	13.5
25	10.0	10.0	11.0	11.0	13.0	11.5	13.5	13.0	15.0	14.0	14.0	13.5
26	10.0	10.0	11.0	10.0	13.0	11.5	14.0	13.0	16.0	14.5	14.0	14.0
27	10.0	10.0	11.0	10.0	13.0	11.5	14.0	14.0	16.0	14.5	14.0	14.0
28	10.0	9.5	11.0	10.5	13.0	12.0	14.0	13.5	16.0	14.5	14.0	13.0
29	10.5	10.0	10.5	10.5	13.0	12.0	14.0	13.5	16.0	14.5	13.5	13.0
30	10.5	10.0	10.5	10.5	12.0	11.0	14.0	13.5	15.0	15.0	13.0	13.0
31	---	---	10.5	10.5	---	---	14.0	13.5	15.0	14.0	---	---
MONTH	11.0	9.5	11.0	9.5	13.0	10.5	14.0	11.5	16.0	13.0	15.0	13.0

MAXIMUM VALUE = 16.0 MINIMUM VALUE = 7.0

09402500 COLORADO RIVER NEAR GRAND CANYON, ARIZ.--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	13000	680	23900	6210	43	785	7270	140	2910
2	11400	309	9770	4120	17	202	7800	128	3170
3	9780	179	4840	6890	56	1300	8560	229	6410
4	7530	97	2100	8730	133	3560	7680	174	4020
5	6640	65	1170	7550	76	1580	10200	208	6520
6	7060	78	1760	8210	56	1350	8110	93	2050
7	8110	78	1840	7970	73	1770	7260	86	1920
8	8780	132	3220	6440	41	760	9990	85	2560
9	7570	231	4970	4200	10	131	10300	146	4850
10	8250	184	4230	6810	29	760	10500	177	5860
11	8360	215	5250	7440	45	998	11400	285	10100
12	7870	516	11200	7570	50	1020	12500	873	35100
13	10400	520	15000	7340	50	991	9760	326	9650
14	9800	448	12000	7500	50	1010	5560	111	1910
15	10600	390	11200	5640	40	609	12900	1000	34800
16	9810	330	8740	3680	30	298	14100	1000	38100
17	9560	320	8260	9620	100	2600	16200	1000	43700
18	7660	200	4140	10900	100	2940	15500	900	37700
19	5100	67	955	12800	200	6910	14900	1000	40200
20	9910	190	6080	12900	200	6970	14700	1000	39700
21	9760	167	4850	12700	200	6860	9320	700	17600
22	10900	310	10500	9120	123	3150	15100	909	40600
23	12100	592	21400	5900	40	659	16700	1130	54200
24	10600	487	14400	12500	342	13100	15600	691	30100
25	7480	201	4090	12100	497	18100	13900	543	21100
26	4900	53	703	9840	238	6600	5380	110	1890
27	9030	79	2190	5080	94	1300	11200	292	10800
28	6980	27	508	8940	166	4940	6230	127	2390
29	6690	37	736	7920	181	4540	13600	569	24900
30	9050	73	2080	6720	211	4240	15700	689	30200
31	8060	76	1720	--	--	--	14900	537	22600
TOTAL	273040	--	203802	243340	--	100033	352820	--	587610

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	10300	229	6320	2940	13	103	10300	154	4550
2	4690	74	1040	4860	21	348	13700	454	18400
3	8560	157	3910	6470	45	859	14800	638	26500
4	8800	117	3530	6950	61	1240	15200	339	14500
5	16400	840	38800	8420	83	2020	13800	195	7500
6	17200	559	26800	8000	68	1530	11800	194	6670
7	15500	463	20300	7960	57	1230	11100	130	4140
8	16000	725	33200	4170	17	247	9710	99	2810
9	15500	405	17600	2680	8	106	12500	311	12000
10	9420	154	4340	7630	75	1550	10600	224	6820
11	5060	50	796	9100	50	1230	9950	132	3920
12	10000	149	4760	8730	50	1180	11000	170	5520
13	9490	106	2850	8320	30	674	10600	121	3630
14	8540	74	1800	7740	30	627	11100	126	3940
15	9550	84	2330	5520	20	298	9300	55	1380
16	9120	79	2120	6290	27	485	10500	102	3020
17	7940	51	1230	6760	27	546	10100	100	2830
18	4300	17	233	6950	35	688	7800	46	1020
19	9340	85	2610	7000	32	666	7660	30	681
20	8420	68	1610	7780	79	1940	7600	75	1540
21	6960	27	507	8460	65	1600	7200	100	1940
22	6600	37	736	8140	39	886	6570	200	3550
23	8650	89	2290	10100	156	4730	9390	200	5400
24	5640	74	1150	10600	240	7490	9620	138	3720
25	3690	43	472	8580	92	2130	8680	45	1070
26	8560	131	3650	11700	179	6610	8380	40	952
27	8500	100	2300	14200	635	26400	9920	86	2650
28	7770	44	954	10700	239	7230	11900	112	3650
29	5680	27	409	--	--	--	10100	83	2390
30	4500	19	259	--	--	--	13600	623	27200
31	3490	13	143	--	--	--	10500	238	7200
TOTAL	274170	--	189049	216750	--	74643	324980	--	191093

09402500 COLORADO RIVER NEAR GRAND CANYON, ARIZ.--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	11300	211	7090	14800	249	10700	12000	177	6180
2	17900	821	44400	14200	184	7530	13900	254	10300
3	18400	726	38500	11600	121	4110	15400	284	13100
4	19200	941	50800	16600	410	20100	15000	293	13800
5	15700	345	14700	15400	308	14300	13900	193	7780
6	22800	1110	73300	16700	315	15800	11200	117	4060
7	22900	951	61100	17700	319	16100	7840	43	997
8	21800	690	42600	16900	306	14700	13100	185	7700
9	19600	569	31600	12000	113	3700	13100	145	5400
10	17700	375	19100	11600	90	2820	13100	139	5240
11	17500	358	17800	16400	235	11200	13300	132	5140
12	16200	499	23200	18200	273	13900	12900	125	4850
13	19000	451	24800	17200	266	13100	10300	84	2430
14	18500	438	22900	14800	232	10100	9320	28	780
15	17600	378	19000	16000	306	15400	14800	184	8620
16	18500	620	34800	14100	242	10300	18000	313	16300
17	15700	263	11800	10800	157	5130	18300	318	17000
18	15900	365	16700	14600	222	9970	18000	228	12100
19	13200	303	11800	15400	152	7000	18500	330	17800
20	15900	317	14700	14200	182	7730	14900	155	6540
21	17700	383	19500	15000	282	12700	12800	106	3900
22	16400	362	17400	15400	205	9610	16900	349	18500
23	15100	221	9730	13800	175	7160	17800	245	12800
24	14000	334	13600	10300	62	1930	19000	304	17100
25	11100	161	5390	18000	380	21900	19000	249	13700
26	9320	100	2650	18600	363	21100	19800	316	18200
27	14900	272	12100	20300	526	31700	17200	210	10400
28	17800	508	26200	17400	311	15800	14400	160	6220
29	17000	458	22900	15400	223	10300	19200	383	21900
30	15600	271	12100	15100	200	8580	18800	312	17500
31	--	--	--	12000	232	8230	--	--	--
TOTAL	504720	--	722260	470500	--	362700	451760	--	306337

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	18300	560	27700	12100	178	6750	17900	6000	321000
2	17200	253	12800	9450	99	2680	18100	7030	402000
3	15600	179	7850	14000	249	11700	16600	8100	414000
4	14100	80	3050	15600	373	17600	15900	4640	220000
5	12000	55	1840	14100	381	16100	9400	5290	134000
6	10600	51	1640	14900	1110	53400	6110	3500	58100
7	14000	176	7710	13400	553	23100	6870	3180	59000
8	15400	258	11600	9370	662	19100	14700	3900	155000
9	14200	1120	37500	7840	2840	71200	14800	2200	87900
10	16700	307	15200	13300	5010	193000	15100	1400	63100
11	16100	202	9160	13000	4520	167000	15800	1550	75500
12	13200	133	4970	15700	2440	111000	16900	1860	94000
13	19000	304	16800	15700	1970	92600	11900	1050	33700
14	18400	319	16600	14700	1680	75400	18300	2150	121000
15	17200	278	13600	14900	1100	51800	17700	2490	136000
16	17200	246	12300	11800	900	28700	17600	2680	117000
17	17600	284	14400	16600	1300	58300	16900	1340	70900
18	16300	197	9100	15700	1200	50900	14600	735	32600
19	14100	195	7780	15200	1200	49200	9420	377	10500
20	17300	740	36800	14500	1100	43100	6390	188	3640
21	17800	404	19300	14600	20400	804000	10900	472	17200
22	17600	281	14200	18400	25500	1270000	12000	575	21500
23	16600	263	12600	11000	22400	665000	11300	319	10800
24	15500	443	20000	22600	20400	1240000	12400	588	24100
25	12300	355	12900	20300	12600	733000	11700	568	20800
26	10000	289	7870	22500	18800	1190000	13600	876	38800
27	13700	215	8770	20300	24400	1390000	9790	319	8740
28	13200	182	7190	20800	30900	1830000	13300	640	27700
29	14100	181	7600	16600	18400	806000	14100	528	22000
30	13100	126	4850	12500	16300	544000	13600	502	21100
31	12800	121	4390	18500	9770	553000	--	--	--
TOTAL	470200	--	388070	469960	--	12167630	403680	--	2821680

TOTAL DISCHARGE FOR YEAR (CFS-DAYS)	4455420
TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS)	18114907

09402500 COLORADO RIVER NEAR GRAND CANYON, ARIZ.--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971 (ANALYSES MADE IN DISTILLED WATER)

DATE	TIME	TEMPERATURE (DEG C)	DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. PERCENT FINER THAN .002 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .004 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .016 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .062 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .125 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .250 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .500 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN 1.00 MM
DEC. 31...	1220	9.5	19400	665	34800	--	--	--	7	39	89	100	--
FEB. 27...	1530	8.0	18000	743	36100	--	--	--	15	65	97	100	--
APR. 23...	1025	9.5	18400	359	17800	--	--	--	10	36	84	100	--
JULY 10...	--	13.5	21100	569	32400	2	3	4	24	45	84	99	100

PARTICLE-SIZE DISTRIBUTION OF BED MATERIAL, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	BED MAT. SIEVE DIAM. PERCENT FINER THAN .125 MM	BED MAT. SIEVE DIAM. PERCENT FINER THAN .250 MM	BED MAT. SIEVE DIAM. PERCENT FINER THAN .500 MM	BED MAT. SIEVE DIAM. PERCENT FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. PERCENT FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. PERCENT FINER THAN 4.00 MM
DEC. 07...	0950	1	19	88	99	100	--
MAR. 29...	--	11	17	86	98	99	100
JUNE 21...	0910	1	14	84	99	100	--

09403000 BRIGHT ANGEL CREEK NEAR GRAND CANYON, ARIZ.

LOCATION.--Lat 36°06'11", long 112°05'44", in sec.5, T.31 N., R.3 E. (unsurveyed), Coconino County, at gaging station in Grand Canyon National Park, 0.4 mile upstream from mouth, and 4 miles northeast of village of Grand Canyon.

DRAINAGE AREA.--101 sq mi.

PERIOD OF RECORD.--Chemical Analyses: October 1952 to September 1971.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)
OCT. 14...	1230	15	--	--	--	--	--	--	196	4	--	2.8
NOV. 09...	1300	16	--	--	--	--	--	--	202	4	--	3.2
JAN. 22...	1335	17	7.0	110	41	21	3.5	1.1	220	0	18	4.0
APR. 11...	1315	25	4.9	60	32	18	2.9	1.2	182	0	5.5	3.5

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
OCT. 14...	--	--	--	--	--	--	--	--	--	310	8.4	15.0
NOV. 09...	--	--	--	--	--	--	--	--	--	318	8.4	10.6
JAN. 22...	.2	.20	2.1	30	210	.29	190	10	.1	340	8.2	9.0
APR. 11...	.0	.10	--	0	158	.21	150	5	.1	294	8.5	17.0

09403780 KANAB CREEK NEAR FREDONIA, ARIZ.

LOCATION.--Lat 36°51'50", long 112°34'45", in SE¼ sec. 14, T. 40 N., R. 3 W. (unsurveyed), Coconino County, at gaging station in Kaibab Indian Reservation, at Nagles Crossing, 0.2 mile downstream from Johnson Wash, and 6.5 miles southwest of Fredonia.

DRAINAGE AREA.--1,085 sq mi.

PERIOD OF RECORD.--Specific conductance: October 1967 to September 1971.
Water temperatures: October 1967 to September 1971.
Sediment records: October 1963 to September 1971.

EXTREMES.--1970-71:
Specific conductance: Maximum daily, 4,900 micromhos Feb. 24; minimum daily, 910 micromhos Aug. 22.
Water temperatures: Maximum, 25.5°C Aug. 25, 28; minimum, freezing point on many days in December, January, February, and March.
Sediment concentrations: Maximum daily, 164,000 mg/l Aug. 21; minimum daily, no flow on many days.
Sediment discharge: Maximum daily, 93,900 tons Aug. 21; minimum daily, 0 tons on many days.

Period of record:
Specific conductance: Maximum daily, 7,000 micromhos Apr. 16, 17, 23, 24, 1968; minimum daily, 550 micromhos Feb. 15, 1968.
Water temperatures: Maximum, 28.0°C June 8, 1968; minimum, freezing point on many days each year.
Sediment concentrations: Maximum daily, 230,000 mg/l July 28, 1968; minimum daily, no flow on many days each year.
Sediment discharge: Maximum daily, 551,000 tons Aug. 18, 1970; minimum daily, 0 tons on many days each year.

REMARKS.--No flow for many days each month.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	2550	1600	1650	1200	---	---	---	---	---	1400
2	---	---	4500	1750	1500	1200	---	---	---	---	---	1300
3	---	---	---	---	1850	1000	---	---	---	---	2450	1450
4	---	---	---	1900	1500	1200	---	---	---	---	2400	---
5	---	---	---	2500	2000	1400	---	---	---	---	1650	---
6	---	---	---	2500	1550	1350	---	---	---	---	1330	---
7	---	---	---	2200	---	---	---	---	---	---	1600	---
8	---	---	---	2150	2050	1700	---	---	---	---	2050	---
9	---	---	---	---	1800	1650	---	---	---	---	1750	---
10	---	---	---	---	2200	1600	---	---	---	---	2500	---
11	---	---	4100	---	2500	1550	---	---	---	---	2750	---
12	---	---	2750	---	2700	1550	---	---	---	---	3000	---
13	---	---	2750	---	2500	1650	---	---	---	---	2500	---
14	---	---	2500	---	---	---	---	---	---	---	1700	---
15	---	---	2400	---	3000	1400	---	---	---	---	1450	---
16	---	---	2300	---	3500	1500	---	---	---	---	1800	---
17	---	---	2300	---	2500	1500	---	---	---	2750	2400	---
18	---	---	5000	1500	2500	1900	---	---	---	3000	2230	---
19	---	---	2800	1400	2500	1500	---	---	---	---	1320	---
20	---	---	---	1350	---	1400	---	---	---	---	1650	---
21	---	---	2200	1600	---	---	---	---	---	---	1090	---
22	---	---	2000	1500	---	1350	---	---	---	---	910	---
23	---	---	2000	1400	---	1450	---	---	---	---	1130	---
24	---	---	2300	---	4900	1700	---	---	---	---	1090	---
25	---	---	2600	1800	2500	1750	---	---	---	---	1400	---
26	---	---	2700	1350	1450	1590	---	---	---	---	1870	---
27	---	---	2300	3000	---	---	---	---	---	---	2580	---
28	---	---	1900	3000	1870	5100	---	---	---	---	4800	---
29	---	---	1950	1550	---	3400	---	---	---	---	---	---
30	---	2500	1850	1450	---	---	---	---	---	---	1250	---
31	---	---	1800	---	---	---	---	---	---	---	1230	---
AVG	---	---	---	---	---	1710	---	---	---	---	1920	---

09403780 KANAB CREEK NEAR FREDONIA, ARIZ. --Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	1.5	0.0	0.0	2.0	---	---	---	---	---	21.5
2	---	---	2.5	0.0	0.5	4.0	---	---	---	---	---	15.0
3	---	---	---	---	0.0	0.0	---	---	---	---	11.0	14.5
4	---	---	---	0.0	0.0	1.0	---	---	---	---	20.5	---
5	---	---	---	0.0	0.5	7.0	---	---	---	---	20.5	---
6	---	---	---	0.0	0.0	3.5	---	---	---	---	20.0	---
7	---	---	---	0.0	---	---	---	---	---	---	15.5	---
8	---	---	---	0.0	0.0	3.0	---	---	---	---	15.5	---
9	---	---	---	---	0.0	1.0	---	---	---	---	19.0	---
10	---	---	---	---	0.0	0.0	---	---	---	---	15.5	---
11	---	---	0.5	---	0.0	0.5	---	---	---	---	16.5	---
12	---	---	1.5	---	1.0	0.0	---	---	---	---	14.5	---
13	---	---	1.5	---	0.5	0.5	---	---	---	---	14.5	---
14	---	---	2.0	---	---	---	---	---	---	---	15.5	---
15	---	---	3.0	---	0.5	5.0	---	---	---	---	15.5	---
16	---	---	2.0	---	1.0	5.5	---	---	---	---	15.5	---
17	---	---	2.0	---	0.5	5.0	---	---	15.0	---	16.5	---
18	---	---	2.0	0.0	5.0	1.0	---	---	10.5	---	22.0	---
19	---	---	0.0	0.0	4.0	0.5	---	---	---	---	21.5	---
20	---	---	---	0.5	---	5.5	---	---	---	---	22.0	---
21	---	---	2.0	1.0	---	---	---	---	---	---	22.0	---
22	---	---	1.0	2.0	---	0.0	---	---	---	---	18.5	---
23	---	---	0.0	0.5	---	0.0	---	---	---	---	20.0	---
24	---	---	0.0	---	8.0	0.0	---	---	---	---	19.0	---
25	---	---	0.0	3.0	7.0	0.0	---	---	---	---	25.5	---
26	---	---	0.0	0.5	5.0	10.0	---	---	---	---	22.5	---
27	---	---	0.0	1.0	---	---	---	---	---	---	21.0	---
28	---	---	0.0	1.5	1.5	18.0	---	---	---	---	25.5	---
29	---	---	0.0	0.5	---	0.5	---	---	---	---	---	---
30	---	6.0	0.0	0.5	---	---	---	---	---	---	23.0	---
31	---	---	0.0	---	---	---	---	---	---	---	21.5	---
AVG	---	---	---	---	---	3.0	---	---	---	---	19.0	---

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1				0	0	0	.70	3680	7.0
2				0	0	0	.20	1430	.85
3				0	0	0	0	0	0
4				0	0	0	0	0	0
5				0	0	0	0	0	0
6				0	0	0	0	0	0
7				0	0	0	0	0	0
8				0	0	0	0	0	0
9				0	0	0	.20	236	.43
10				0	0	0	.50	636	1.1
11				0	0	0	3.5	1630	20
12				0	0	0	.60	3180	5.3
13				0	0	0	3.2	3780	42
14				0	0	0	2.6	2110	21
15				0	0	0	2.0	1910	13
16				0	0	0	.60	1470	2.4
17				0	0	0	.20	420	.23
18				0	0	0	1.6	1200	14
19				0	0	0	17	1390	126
20				0	0	0	30	2530	240
21				0	0	0	13	1740	60
22				0	0	0	5.2	2460	45
23				0	0	0	6.2	2480	41
24				0	0	0	17	1490	78
25				0	0	0	15	1190	48
26				.30	1820	1.8	13	660	23
27				.30	450	.36	12	1200	39
28				0	0	0	11	3960	118
29				0	0	0	10	4700	127
30				5.7	8520	144	9.0	4800	117
31				--	--	--	6.0	2050	33
TOTAL	0	--	0	6.30	--	146.16	180.30	--	1222.31

09403780 KANAB CREEK NEAR FREDONIA, ARIZ.--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	4.6	4820	60	6.3	6610	204	5.4	2900	42
2	7.1	3580	69	15	9330	396	7.0	3320	67
3	6.0	1560	25	2.8	3980	34	7.2	4110	84
4	.70	870	1.6	2.3	3100	19	8.3	6100	118
5	.50	610	.82	4.2	3080	45	7.7	11800	248
6	.30	590	.48	4.8	3370	56	6.6	7670	140
7	.20	850	.46	1.2	1750	7.0	5.6	6790	104
8	.20	1040	.56	7.3	4480	120	6.6	8150	146
9	.20	850	.46	12	1670	59	6.2	6380	111
10	.20	850	.46	1.9	1200	8.1	10	11000	371
11	.20	850	.46	.80	1150	2.5	17	20800	1230
12	.20	850	.46	1.2	1530	6.5	11	26800	801
13	.40	900	.97	.50	600	.81	14	16200	670
14	1.0	1000	2.7	2.0	1910	16	16	13200	596
15	1.5	1000	4.1	1.0	1250	3.4	10	10500	284
16	5.0	1000	14	.70	300	.57	8.2	43400	923
17	5.0	1000	14	.80	350	.76	4.1	27100	335
18	30	1350	109	1.8	1770	9.9	2.7	10800	107
19	35	7250	685	.80	1910	4.1	8.6	13900	360
20	20	8300	448	.80	1040	2.2	10	26800	764
21	3.0	3300	27	.80	570	1.2	8.7	18400	424
22	20	11200	605	.60	210	.34	7.3	9500	211
23	5.8	4100	64	.80	250	.54	4.3	4770	66
24	3.2	3000	26	.50	600	.81	3.3	3350	40
25	7.6	2730	79	3.1	3500	40	.50	600	.81
26	.70	1150	2.2	3.7	3880	40	.10	796	.21
27	.50	1000	1.4	4.5	3280	45	.80	537	2.0
28	4.3	3970	110	4.6	3930	53	0	0	0
29	12	9900	339	--	--	--	0	0	0
30	12	8200	293	--	--	--	0	0	0
31	7.2	5440	113	--	--	--	0	0	0
TOTAL	194.60	--	3097.13	86.80	--	1175.73	197.20	--	8245.02

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	0	0	0	0	0	0			
2	0	0	0	0	0	0			
3	0	0	0	0	0	0			
4	0	0	0	0	0	0			
5	0	0	0	0	0	0			
6	0	0	0	.10	10	.01			
7	0	0	0	.60	5000	8.1			
8	0	0	0	.50	4000	5.4			
9	0	0	0	.40	0	0			
10	0	0	0	0	0	0			
11	0	0	0	0	0	0			
12	0	0	0	0	0	0			
13	0	0	0	0	0	0			
14	0	0	0	0	0	0			
15	1.2	1890	6.3	0	0	0			
16	.10	458	.25	0	0	0			
17	0	0	0	0	0	0			
18	0	0	0	0	0	0			
19	0	0	0	0	0	0			
20	0	0	0	0	0	0			
21	0	0	0	0	0	0			
22	0	0	0	0	0	0			
23	0	0	0	0	0	0			
24	0	0	0	0	0	0			
25	0	0	0	0	0	0			
26	0	0	0	0	0	0			
27	0	0	0	0	0	0			
28	0	0	0	0	0	0			
29	0	0	0	0	0	0			
30	0	0	0	0	0	0			
31	--	--	--	0	0	0			
TOTAL	1.30	--	6.55	1.60	--	13.51	0	--	0

09403780 KANAB CREEK NEAR FREDONIA, ARIZ.--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	0	0	0	12	18000	1030	7.9	67300	1400
2	0	0	0	.80	5000	11	.10	27000	7.3
3	0	0	0	8.1	5980	669	0	0	0
4	0	0	0	19	10500	1760	0	0	0
5	0	0	0	1.0	1000	2.7	0	0	0
6	0	0	0	130	143000	44100	0	0	0
7	0	0	0	1.2	91400	382	0	0	0
8	0	0	0	5.4	62100	1240	0	0	0
9	0	0	0	.40	40100	53	0	0	0
10	0	0	0	.60	104000	168	0	0	0
11	0	0	0	.40	101000	109	0	0	0
12	0	0	0	.40	66600	72	0	0	0
13	0	0	0	1.2	83600	321	0	0	0
14	0	0	0	.40	49900	54	0	0	0
15	0	0	0	.30	28000	23	0	0	0
16	0	0	0	.20	13000	7.0	0	0	0
17	1.7	9110	113	11	9660	1830	0	0	0
18	.60	4400	10	358	60400	81500	0	0	0
19	.10	900	.24	16	26000	1740	0	0	0
20	0	0	0	24	62500	6110	0	0	0
21	0	0	0	165	164000	93900	0	0	0
22	2.1	9930	139	81	80800	38500	0	0	0
23	.90	5940	15	85	79800	72300	0	0	0
24	.60	7000	11	39	78600	10800	0	0	0
25	.40	4000	4.3	12	43400	3220	0	0	0
26	.20	2000	1.1	136	47400	37100	0	0	0
27	.10	1000	.27	.70	7500	14	0	0	0
28	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0
30	.80	6170	75	104	15200	13800	0	0	0
31	.40	5900	6.4	57	61800	8460	--	--	--
TOTAL	7.90	--	375.31	1270.10	--	419275.7	8.00	--	1407.3

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 1954.10
TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS) 434964.72

PARTICLE-SIZE DISTRIBUTION OF BED MATERIAL, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	BED MAT. SIEVE DIAM. PERCENT FINER THAN .062 MM	BED MAT. SIEVE DIAM. PERCENT FINER THAN .125 MM	BED MAT. SIEVE DIAM. PERCENT FINER THAN .250 MM	BED MAT. SIEVE DIAM. PERCENT FINER THAN .500 MM	BED MAT. SIEVE DIAM. PERCENT FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. PERCENT FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. PERCENT FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. PERCENT FINER THAN 8.00 MM
MAY									
26...	1130	1	9	55	92	98	100	--	--
AUG.									
21...	1530	2	7	26	78	92	96	98	100

09415000 VIRGIN RIVER AT LITTLEFIELD, ARIZ.
(Irrigation network station)

LOCATION.--Lat 36°53'27", long 113°55'30", in SW¼SW¼ sec.4, T.40 N., R.15 W., Mohave County, at gaging station 0.4 mile downstream from Beaver Dam Wash, 0.4 mile upstream from Littlefield, and 36 miles upstream from waterline of Lake Mead at elevation 1,221 ft above mean sea level.

DRAINAGE AREA.--5,090 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: July 1949 to September 1971.
Water temperatures: October 1947 to September 1971.
Sediment records: October 1947 to September 1968.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)
NOV. 04...	0930	128	19	--	400	89	300	26	345	0	900	410
DEC. 23...	1030	193	21	30	290	85	220	22	321	0	710	330
JAN. 15...	1230	192	20	40	240	69	250	22	334	0	740	320
FEB. 11...	1100	121	20	--	290	86	250	26	298	0	870	360
MAR. 23...	1200	135	--	--	290	94	250	27	285	0	920	360
APR. 29...	1240	73	--	--	360	120	280	38	304	0	1100	400
JUNE 09...	1600	68	--	--	350	110	270	28	195	0	1200	370
AUG. 03...	0940	62	--	--	350	110	250	25	293	0	1100	380
SEP. 16...	0900	63	23	--	360	110	260	28	314	0	1200	380

09415000 VIRGIN RIVER AT LITTLEFIELD, ARIZ.--Continued

EXTREMES.--1970-71:
Specific conductance: Maximum daily, 3,900 micromhos Aug. 19; minimum daily, 1,550 micromhos May 11.
Water temperatures: Maximum, 29.0°C on several days during July and August; minimum, 2.0°C Jan. 4, 5.

Period of record:
Specific conductance (1949-71): Maximum daily, 4,650 micromhos Aug. 21, 1966; minimum daily, 689 micromhos May 14, 15, 1969.
Water temperatures: Maximum, 33.5°C July 7, 1953; minimum, 1.5°C Jan. 4, 1949; Jan. 4, 1950.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
NOV. 04...	.7	1.2	.00	880	2370	2300	3.22	1360	1080	3.5	3150	7.6
DEC. 23...	.8	.90	.17	720	--	1840	2.50	1100	837	2.9	2600	8.0
JAN. 15...	1.0	.90	.03	630	--	1800	2.45	890	616	3.7	2590	7.6
FEB. 11...	--	.00	.07	--	--	2100	2.86	1100	856	3.3	2830	8.0
MAR. 23...	--	.20	.03	--	--	2080	2.83	1100	880	3.3	2680	7.7
APR. 29...	--	.30	.06	--	--	--	--	1400	1100	3.3	3256	7.8
JUNE 09...	--	.24	.06	--	--	--	--	1300	1200	3.2	3200	7.3
AUG. 03...	--	.16	.06	--	--	--	--	1300	1100	3.0	3100	7.2
SEP. 16...	.3	.26	.06	1000	--	2520	3.43	1400	1100	3.1	3240	7.3

09415000 VIRGIN RIVER AT LITTLEFIELD, ARIZ.--Continued

FIELD DETERMINATIONS OF WATER QUALITY, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)
NOV.						
04...	0930	128	3300	7.7	13.0	--
DEC.						
23...	1030	193	2400	7.5	10.0	10.6
FEB.						
11...	1115	119	2800	7.6	15.5	9.4
MAR.						
23...	1200	119	3000	7.9	17.0	7.6
JUNE						
09...	1600	68	3000	7.7	30.0	--
AUG.						
03...	0940	62	3500	7.9	22.0	7.2
SEP.						
16...	0900	63	3250	7.7	18.0	7.3

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3080	2990	1830	2180	2330	2560	2830	3100	2900	3000	3000	3100
2	3130	3050	2230	1860	2450	2510	2950	3200	3000	3000	3000	3200
3	3170	3010	1640	2370	2500	2380	3040	3200	3100	3000	3100	3300
4	3180	2940	2440	2360	2440	2530	3040	3100	3000	3100	2900	3000
5	3210	3000	2560	2200	2450	2430	3050	---	3000	3200	3000	3100
6	3410	---	2600	2780	2620	2360	3040	2800	3100	3100	3000	3100
7	3310	3000	2610	2830	2620	2530	3040	2200	3100	3100	2600	3100
8	3250	3150	2610	2630	2390	2510	3040	2000	3100	3100	2850	3000
9	3360	2830	2450	2700	2730	2450	3040	1800	3000	3100	2900	3200
10	3480	2920	1970	2540	2650	2470	3070	2100	3100	3100	3300	3200
11	3250	3010	2290	2520	---	2600	3060	1550	3000	3200	2900	3200
12	3280	2990	2370	2450	2660	2540	3080	1900	3000	3100	3000	3100
13	3250	2980	2610	2390	2590	2450	---	2150	3100	3100	3100	3200
14	3360	2660	2330	2500	2390	2310	2910	2050	3000	3100	---	3200
15	3360	2820	2630	2430	2350	2460	2880	2150	3000	3100	3000	3200
16	3360	2800	2490	2410	2480	2520	2880	2400	3000	3000	3200	3200
17	3330	2800	2650	2350	2390	2590	2920	2100	3000	3000	3200	3200
18	3380	2930	2540	2430	2090	2680	2770	2400	3000	3000	3100	3200
19	3400	2990	---	2370	2180	2660	2460	2700	3000	3000	3900	3200
20	3410	2920	2530	2370	2280	2670	2790	2900	3000	3100	3000	3200
21	3330	2920	2570	2330	2380	2580	2890	2900	3000	3200	2400	3200
22	3260	2900	2490	2330	2300	2580	2900	2900	3000	3200	3000	3200
23	3340	2930	2400	2290	2440	2610	2830	2900	3100	3100	3100	3100
24	3300	2870	2490	2380	2350	2630	2950	3000	3100	3100	2600	3100
25	3320	---	---	2480	2390	2680	---	3200	3100	3100	2900	3200
26	3390	2120	2570	2360	2570	2860	---	---	3100	3100	2900	3200
27	3340	---	2510	2460	2610	2800	2920	3200	3100	3100	2900	3100
28	3330	2210	2450	2340	2610	2630	3020	3200	3200	3000	3000	3100
29	3220	2460	2470	2540	---	2580	3020	3200	3200	3000	2500	3200
30	3360	1860	2560	2500	---	2850	3040	3000	3100	3200	2700	3100
31	3230	---	2600	2530	---	2890	---	3000	---	3000	---	---
AVG	3300	2820	2430	2430	2450	2580	2940	2630	3050	3080	2970	3160

09415000 VIRGIN RIVER AT LITTLEFIELD, ARIZ.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.0	15.0	11.0	11.0	15.0	9.0	18.0	23.0	20.0	25.0	27.0	24.0
2	23.0	16.0	11.0	8.0	15.0	10.0	20.0	21.0	20.0	24.0	27.0	23.0
3	23.0	16.0	11.0	3.0	11.0	15.0	20.0	21.0	20.0	27.0	28.0	23.0
4	23.0	14.0	11.0	2.0	11.0	15.0	21.0	19.0	25.0	25.0	29.0	23.0
5	23.0	18.0	11.0	2.0	12.0	13.0	21.0	---	24.0	25.0	28.0	26.0
6	22.0	---	12.0	6.0	12.0	13.0	21.0	14.0	25.0	25.0	28.0	25.0
7	17.0	16.0	12.0	8.0	13.0	15.0	21.0	16.0	28.0	25.0	28.0	25.0
8	19.0	16.0	12.0	10.0	14.0	16.0	22.0	19.0	25.0	26.0	27.0	25.0
9	21.0	16.0	11.0	11.0	15.0	17.0	20.0	21.0	22.0	25.0	27.0	26.0
10	20.0	16.0	11.0	10.0	16.0	16.0	20.0	22.0	22.0	26.0	29.0	26.0
11	20.0	16.0	9.0	9.0	---	18.0	22.0	21.0	23.0	26.0	28.0	26.0
12	20.0	16.0	11.0	9.0	17.0	15.0	22.0	20.0	26.0	29.0	26.0	27.0
13	20.0	12.0	11.0	9.0	17.0	16.0	---	22.0	26.0	28.0	28.0	27.0
14	20.0	13.0	---	10.0	13.0	16.0	19.0	24.0	26.0	29.0	---	26.0
15	20.0	13.0	11.0	10.0	13.0	17.0	20.0	24.0	25.0	29.0	25.0	25.0
16	19.0	18.0	11.0	11.0	15.0	18.0	22.0	20.0	25.0	29.0	27.0	24.0
17	20.0	14.0	10.0	13.0	13.0	15.0	14.0	17.0	26.0	29.0	28.0	19.0
18	20.0	14.0	10.0	13.0	13.0	14.0	16.0	20.0	25.0	29.0	29.0	19.0
19	19.0	14.0	---	15.0	9.0	15.0	16.0	22.0	25.0	29.0	28.0	21.0
20	18.0	16.0	10.0	15.0	9.0	17.0	17.0	20.0	25.0	29.0	27.0	21.0
21	18.0	14.0	10.0	14.0	11.0	17.0	15.0	17.0	25.0	28.0	27.0	21.0
22	18.0	16.0	10.0	12.0	12.0	18.0	19.0	18.0	25.0	28.0	26.0	21.0
23	19.0	14.0	10.0	12.0	13.0	19.0	19.0	23.0	27.0	28.0	26.0	22.0
24	19.0	16.0	10.0	18.0	13.0	20.0	18.0	23.0	25.0	27.0	27.0	22.0
25	17.0	---	---	20.0	11.0	20.0	---	23.0	24.0	29.0	26.0	20.0
26	16.0	14.0	10.0	13.0	11.0	19.0	---	---	24.0	28.0	26.0	19.0
27	15.0	---	10.0	14.0	11.0	19.0	20.0	17.0	24.0	29.0	26.0	18.0
28	15.0	12.0	10.0	14.0	12.0	19.0	18.0	17.0	22.0	29.0	27.0	19.0
29	16.0	12.0	10.0	10.0	---	20.0	22.0	19.0	23.0	29.0	27.0	19.0
30	16.0	10.0	10.0	14.0	---	19.0	23.0	20.0	25.0	28.0	24.0	16.0
31	16.0	---	11.0	14.0	---	18.0	---	18.0	---	28.0	---	---
AVG	19.0	14.5	10.5	11.0	13.0	16.5	19.5	20.0	24.0	27.5	27.0	22.5

09421000 LAKE MEAD AT HOOVER DAM, ARIZ.-NEV.

LOCATION.--Lat 36°00'58", long 114°44'13", in NE¼SW¼ sec. 3, T. 30 N., R. 23 W., Gila and Salt River merdian, on State line between Mohave County, Ariz., and Clark County, Nev., at gaging station midway between Hoover Dam intake towers.

DRAINAGE AREA.--167, 800 sq mi, approximately.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DEPTH (FT)	ELEVATION ABOVE MEAN SEA LEVEL (FT)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)
OCT.										
29...	0	1152	9.4	86	34	110	5.0	140	0	340
29...	10	1142	--	--	--	--	--	138	0	--
29...	25	1127	--	--	--	--	--	137	0	--
29...	75	1077	--	--	--	--	--	138	0	--
29...	125	1027	9.7	91	32	110	5.0	157	0	320
29...	175	977	--	--	--	--	--	157	0	--
29...	225	927	10	90	32	100	4.0	161	0	310
29...	250	902	10	90	31	100	4.0	162	0	300
29...	275	877	9.7	90	31	100	4.0	162	0	300
29...	325	827	--	--	--	--	--	161	0	--
29...	375	777	10	90	32	100	4.0	162	0	300
29...	432	720	--	--	--	--	--	163	0	--
NOV.										
25...	0	1152	11	88	34	110	5.0	142	0	330
25...	10	1142	--	--	--	--	--	142	0	--
25...	25	1127	--	--	--	--	--	142	0	--
25...	75	1077	9.6	89	34	110	5.0	144	0	330
25...	125	1027	9.6	92	32	110	5.0	156	0	320
25...	175	977	9.9	92	32	100	5.0	160	0	310
25...	225	927	9.3	92	30	100	5.0	162	0	310
25...	250	902	10	91	30	100	5.0	162	0	310
25...	275	877	--	--	--	--	--	162	0	--
25...	325	827	--	--	--	--	--	161	0	--
25...	375	777	12	91	30	110	5.0	162	0	320
25...	433	719	--	--	--	--	--	165	0	--
DEC.										
30...	0	1153	8.3	89	33	110	5.0	149	0	330
30...	10	1143	--	--	--	--	--	148	0	--
30...	25	1128	--	--	--	--	--	149	0	--
30...	75	1078	--	--	--	--	--	149	0	--
30...	125	1028	7.8	89	33	110	5.0	149	0	330
30...	175	978	--	--	--	--	--	149	0	--
30...	225	928	7.8	89	32	110	5.0	149	0	320
30...	250	903	8.0	90	32	110	4.0	157	0	320
30...	275	878	--	--	--	--	--	161	0	--
30...	325	828	--	--	--	--	--	162	0	--
30...	375	778	8.8	90	31	110	4.0	162	0	320
30...	434	719	--	--	--	--	--	167	0	--
JAN.										
28...	0	1153	8.6	90	32	110	5.0	155	0	320
28...	10	1143	--	--	--	--	--	154	0	--
28...	25	1128	--	--	--	--	--	154	0	--
28...	75	1078	--	--	--	--	--	153	0	--
28...	125	1028	--	--	--	--	--	153	0	--
28...	175	978	8.3	39	33	110	5.0	153	0	330
28...	225	928	--	--	--	--	--	151	0	--
28...	250	903	8.3	90	32	110	5.0	151	0	330
28...	275	878	8.5	91	32	110	5.0	151	0	330
28...	325	828	--	--	--	--	--	151	0	--
28...	375	778	8.6	91	33	110	5.0	153	0	330
28...	435	718	--	--	--	--	--	157	0	--
FEB.										
25...	0	1150	8.5	90	32	110	5.0	155	0	330
25...	10	1140	--	--	--	--	--	155	0	--
25...	25	1125	--	--	--	--	--	155	0	--
25...	75	1075	8.5	89	32	110	5.0	155	0	320
25...	125	1025	--	--	--	--	--	155	0	--
25...	175	975	--	--	--	--	--	155	0	--
25...	225	925	8.5	90	32	110	5.0	155	0	320
25...	375	775	8.9	88	32	100	4.0	162	0	310
25...	250	900	8.5	89	31	100	4.0	160	0	310
25...	275	875	8.9	88	32	100	4.0	162	0	310
25...	325	825	--	--	--	--	--	162	0	--
25...	433	717	--	--	--	--	--	163	0	--
MAR.										
30...	0	1148	7.2	90	32	110	5.0	156	0	320
30...	10	1138	--	--	--	--	--	156	0	--
30...	25	1123	--	--	--	--	--	156	0	--
30...	75	1073	--	--	--	--	--	156	0	--
30...	125	1023	8.4	90	32	110	5.0	156	0	320
30...	175	973	--	--	--	--	--	156	0	--
30...	225	923	8.9	90	32	110	5.0	156	0	320
30...	250	898	--	--	--	--	--	156	0	--
30...	275	873	8.9	90	32	110	5.0	157	0	320
30...	325	823	--	--	--	--	--	159	0	--
30...	375	773	9.4	89	32	100	5.0	159	0	320
30...	430	718	--	--	--	--	--	160	0	--

09421000 LAKE MEAD AT HOOVER DAM, ARIZ.- NEV.--Continued

PERIOD OF RECORD.--Chemical analyses: October 1940 to September 1971.

REMARKS.--Samples collected by Bureau of Reclamation and analyzed by the Metropolitan Water District of Southern California, LaVerne, Calif.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED NITRATE (NO3) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)
OCT.										
29...	98	1.3	753	1.02	350	240	2.5	1150	8.0	20.0
29...	98	--	--	--	--	--	--	1160	7.9	20.0
29...	99	--	--	--	--	--	--	1160	7.8	20.0
29...	99	--	--	--	--	--	--	1160	7.9	20.0
29...	94	2.4	741	1.01	360	230	2.5	1150	7.7	17.0
29...	93	--	--	--	--	--	--	1150	7.8	14.5
29...	88	2.8	716	.97	350	220	2.3	1120	7.9	13.5
29...	88	3.0	706	.96	350	220	2.3	1100	7.9	13.0
29...	88	2.4	705	.96	350	220	2.3	1100	7.8	13.0
29...	90	--	--	--	--	--	--	1110	7.8	12.0
29...	90	2.0	708	.96	360	230	2.3	1130	7.6	12.0
29...	90	--	--	--	--	--	--	1140	7.6	12.0
NOV.										
25...	98	1.6	748	1.02	360	240	2.5	1150	8.0	17.5
25...	98	--	--	--	--	--	--	1150	7.9	17.5
25...	99	--	--	--	--	--	--	1150	7.9	17.5
25...	100	1.7	750	1.02	360	240	2.5	1170	7.9	17.0
25...	94	2.4	742	1.01	360	230	2.5	1150	7.6	16.5
25...	94	2.7	725	.99	360	230	2.3	1150	7.7	15.0
25...	88	2.8	717	.98	350	220	2.3	1120	7.9	13.5
25...	89	2.8	718	.98	350	220	2.3	1120	7.8	13.0
25...	88	--	--	--	--	--	--	1110	8.0	12.5
25...	90	--	--	--	--	--	--	1120	7.8	12.5
25...	91	2.5	742	1.01	350	220	2.6	1120	7.8	12.0
25...	92	--	--	--	--	--	--	1130	7.6	12.0
DEC.										
30...	97	1.9	747	1.02	360	240	2.5	1170	7.7	14.0
30...	97	--	--	--	--	--	--	1170	8.0	14.0
30...	97	--	--	--	--	--	--	1170	8.0	14.0
30...	97	--	--	--	--	--	--	1170	7.7	14.0
30...	97	2.0	747	1.02	360	240	2.5	1170	7.8	14.0
30...	97	--	--	--	--	--	--	1170	7.9	14.0
30...	97	2.3	736	1.00	360	240	2.5	1170	8.1	14.0
30...	93	2.4	736	1.00	360	230	2.5	1140	7.9	13.5
30...	92	--	--	--	--	--	--	1140	7.9	13.5
30...	90	--	--	--	--	--	--	1130	7.8	13.0
30...	90	2.3	736	1.00	350	220	2.6	1130	7.8	12.0
30...	90	--	--	--	--	--	--	1140	8.0	12.0
JAN.										
28...	95	2.0	739	1.01	360	230	2.5	1160	8.0	13.0
28...	94	--	--	--	--	--	--	1160	8.0	13.0
28...	94	--	--	--	--	--	--	1160	8.1	13.0
28...	94	--	--	--	--	--	--	1160	8.0	12.5
28...	95	--	--	--	--	--	--	1160	8.0	12.5
28...	95	2.6	748	1.02	360	240	2.5	1170	8.1	12.5
28...	96	--	--	--	--	--	--	1170	8.1	12.5
28...	96	2.2	748	1.02	360	240	2.5	1170	8.1	12.0
28...	96	2.1	749	1.02	360	240	2.5	1170	8.1	12.0
28...	96	--	--	--	--	--	--	1170	8.1	12.0
28...	96	2.1	751	1.02	360	240	2.5	1170	7.9	12.0
28...	95	--	--	--	--	--	--	1170	8.0	12.0
FEB.										
25...	93	1.9	746	1.01	360	230	2.5	1150	8.1	12.5
25...	93	--	--	--	--	--	--	1150	7.9	12.5
25...	93	--	--	--	--	--	--	1150	8.1	12.5
25...	93	1.1	735	1.00	360	230	2.5	1150	8.2	12.0
25...	93	--	--	--	--	--	--	1150	8.1	12.0
25...	93	--	--	--	--	--	--	1150	8.0	12.0
25...	92	2.2	736	1.00	360	230	2.5	1150	8.1	12.0
25...	86	2.1	711	.97	350	220	2.3	1100	8.1	11.0
25...	89	2.3	713	.97	350	220	2.3	1130	8.1	12.0
25...	88	1.9	713	.97	350	220	2.3	1110	8.0	11.5
25...	87	--	--	--	--	--	--	1100	8.0	11.0
25...	86	--	--	--	--	--	--	1110	8.0	11.0
MAR.										
30...	92	1.5	735	1.00	360	230	2.5	1140	8.2	15.5
30...	93	--	--	--	--	--	--	1140	8.2	15.5
30...	92	--	--	--	--	--	--	1150	8.2	15.0
30...	92	--	--	--	--	--	--	1140	8.2	12.0
30...	92	1.8	736	1.00	360	230	2.5	1140	8.0	12.0
30...	91	--	--	--	--	--	--	1150	8.0	12.0
30...	92	2.0	737	1.00	360	230	2.5	1140	8.2	12.0
30...	92	--	--	--	--	--	--	1140	8.1	11.5
30...	92	2.0	737	1.00	360	230	2.5	1140	8.1	11.5
30...	92	--	--	--	--	--	--	1130	8.1	11.5
30...	90	2.0	725	.99	360	230	2.3	1130	8.0	11.5
30...	92	--	--	--	--	--	--	1130	8.0	11.5

09421000 LAKE MEAD AT HOOVER DAM, ARIZ.-NEV.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971--Continued

DATE	DEPTH (FT)	ELE-VATION ABOVE MEAN SEA LEVEL (FT)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)
APR.										
27...	0	1149	7.2	89	34	110	4.0	156	0	320
27...	10	1139	--	--	--	--	--	--	--	--
27...	25	1124	--	--	--	--	--	--	--	--
27...	75	1074	--	--	--	--	--	--	--	--
27...	125	1024	--	--	--	--	--	--	--	--
27...	175	974	8.0	89	34	110	4.0	156	0	320
27...	225	924	8.9	89	33	100	4.0	157	0	310
27...	250	899	8.9	89	32	100	4.0	157	0	310
27...	275	874	--	--	--	--	--	--	--	--
27...	325	824	--	--	--	--	--	--	--	--
27...	375	774	8.9	89	32	100	4.0	159	0	310
27...	430	719	--	--	--	--	--	--	--	--
MAY										
27...	0	1149	7.6	91	33	110	4.0	159	0	320
27...	10	1139	--	--	--	--	--	160	0	--
27...	25	1124	--	--	--	--	--	159	0	--
27...	75	1074	7.4	91	33	110	4.0	159	0	320
27...	125	1024	--	--	--	--	--	159	0	--
27...	175	974	--	--	--	--	--	159	0	--
27...	225	924	8.5	90	32	110	4.0	159	0	320
27...	250	899	8.7	90	32	100	4.0	160	0	310
27...	275	874	8.9	89	32	100	4.0	160	0	320
27...	325	824	--	--	--	--	--	161	0	--
27...	375	774	9.2	89	32	100	4.0	162	0	310
27...	430	719	--	--	--	--	--	162	0	--
JUNE										
30...	0	1150	8.5	88	32	110	5.0	153	0	320
30...	10	1140	--	--	--	--	--	151	0	--
30...	25	1125	8.2	88	32	110	5.0	151	0	320
30...	75	1075	8.2	90	33	110	4.0	159	0	330
30...	125	1025	--	--	--	--	--	159	0	--
30...	175	975	--	--	--	--	--	160	0	--
30...	225	925	8.9	91	32	110	4.0	160	0	320
30...	250	900	9.2	91	32	100	4.0	160	0	310
30...	275	875	--	--	--	--	--	161	0	--
30...	325	825	9.7	91	32	100	4.0	162	0	320
30...	375	775	--	--	--	--	--	162	0	--
30...	430	720	--	--	--	--	--	162	0	--
JULY										
29...	0	1151	8.5	85	32	110	5.0	140	0	330
29...	10	1141	--	--	--	--	--	142	0	--
29...	25	1126	8.0	85	33	100	5.0	144	0	320
29...	75	1076	7.8	88	33	100	4.0	162	0	320
29...	125	1026	--	--	--	--	--	161	0	--
29...	175	976	--	--	--	--	--	161	0	--
29...	225	926	10	89	32	100	4.0	162	0	310
29...	250	901	9.2	90	32	100	4.0	162	0	310
29...	275	876	--	--	--	--	--	162	0	--
29...	325	826	9.2	91	31	100	4.0	163	0	310
29...	375	776	--	--	--	--	--	163	0	--
29...	430	721	--	--	--	--	--	163	0	--
AUG.										
30...	0	1153	7.6	78	34	110	5.0	121	0	340
30...	10	1143	--	--	--	--	--	122	0	--
30...	25	1128	--	--	--	--	--	123	0	--
30...	75	1078	9.0	88	34	110	5.0	154	0	320
30...	125	1028	--	--	--	--	--	157	0	--
30...	175	978	8.5	90	33	110	5.0	157	0	320
30...	225	928	9.5	89	32	100	5.0	160	0	310
30...	250	903	9.5	89	32	100	5.0	161	0	310
30...	275	878	--	--	--	--	--	160	0	--
30...	325	828	--	--	--	--	--	160	0	--
30...	375	778	9.5	89	32	100	5.0	161	0	310
30...	430	723	--	--	--	--	--	163	0	--
SEP.										
29...	0	1154	7.6	79	33	110	4.0	127	0	330
29...	10	1144	--	--	--	--	--	127	0	--
29...	25	1129	9.1	80	33	110	4.0	128	0	320
29...	75	1079	9.1	88	32	100	4.0	155	0	320
29...	125	1029	7.8	90	32	110	4.0	157	0	320
29...	175	979	--	--	--	--	--	157	0	--
29...	225	929	9.1	90	31	100	4.0	161	0	310
29...	250	904	9.1	90	31	100	4.0	161	0	310
29...	275	879	--	--	--	--	--	161	0	--
29...	325	829	--	--	--	--	--	161	0	--
29...	375	779	11	89	31	100	4.0	162	0	300
29...	430	724	--	--	--	--	--	162	0	--

COLORADO RIVER MAIN STEM

09421000 LAKE MEAD AT HOOVER DAM, ARIZ.-NEV.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971--Continued

DATE	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS_ SOLVED NITRATE (NO3) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	HARD- NESS (CA,MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	SODIUM AD- SORP- TION RATIO	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH (UNITS)	TEMP- ERATURE (DEG C)
APR.										
27...	93	1.9	736	1.00	360	230	2.5	1140	8.2	15.0
27...	93	--	--	--	--	--	--	1150	8.2	14.5
27...	93	--	--	--	--	--	--	1150	8.2	14.5
27...	92	--	--	--	--	--	--	1150	8.1	13.5
27...	93	--	--	--	--	--	--	1150	8.2	12.0
27...	93	1.4	736	1.00	360	230	2.5	1150	8.2	12.0
27...	92	2.0	716	.97	360	230	2.3	1130	8.2	11.5
27...	92	2.0	715	.97	360	230	2.3	1130	7.9	11.5
27...	92	--	--	--	--	--	--	1130	8.1	11.5
27...	91	--	--	--	--	--	--	1130	8.1	11.5
27...	91	2.0	715	.97	360	230	2.3	1130	8.1	11.5
27...	91	--	--	--	--	--	--	1130	8.0	11.5
MAY										
27...	94	1.9	740	1.01	360	230	2.5	1150	7.6	17.0
27...	93	--	--	--	--	--	--	1150	7.5	17.0
27...	93	--	--	--	--	--	--	1150	7.8	17.0
27...	93	2.6	739	1.01	360	230	2.5	1150	7.6	16.0
27...	93	--	--	--	--	--	--	1150	8.0	14.5
27...	93	--	--	--	--	--	--	1140	8.2	12.5
27...	92	2.2	737	1.00	360	230	2.5	1140	7.8	11.5
27...	91	2.3	717	.98	360	230	2.3	1130	7.7	11.5
27...	91	2.4	726	.99	350	220	2.3	1130	7.6	11.5
27...	91	--	--	--	--	--	--	1130	7.8	11.5
27...	90	1.9	716	.97	350	220	2.3	1130	7.6	11.5
27...	90	--	--	--	--	--	--	1130	7.7	11.5
JUNE										
30...	95	1.2	735	1.00	350	220	2.6	1160	8.0	23.5
30...	95	--	--	--	--	--	--	1160	7.7	23.0
30...	91	1.2	729	.99	350	230	2.6	1160	7.9	22.5
30...	91	1.4	746	1.01	360	230	2.5	1160	7.9	18.0
30...	90	--	--	--	--	--	--	1150	8.1	14.0
30...	90	--	--	--	--	--	--	1150	7.9	13.5
30...	89	1.8	736	1.00	360	230	2.5	1140	8.2	12.0
30...	88	1.9	715	.97	360	230	2.3	1140	7.8	11.5
30...	88	--	--	--	--	--	--	1140	7.9	11.5
30...	88	1.8	726	.99	360	230	2.3	1140	7.9	11.5
30...	89	--	--	--	--	--	--	1140	7.9	11.5
30...	88	--	--	--	--	--	--	1140	7.8	11.5
JULY										
29...	90	1.2	731	.99	350	240	2.6	1150	7.5	25.0
29...	89	--	--	--	--	--	--	1150	7.5	25.0
29...	88	1.2	711	.97	350	230	2.3	1150	7.5	24.0
29...	85	1.4	719	.98	360	230	2.3	1160	7.5	18.0
29...	85	--	--	--	--	--	--	1160	7.5	15.0
29...	86	--	--	--	--	--	--	1160	7.5	13.0
29...	87	1.6	714	.97	360	230	2.3	1160	7.6	12.0
29...	88	1.6	715	.97	360	230	2.3	1160	7.8	11.5
29...	88	--	--	--	--	--	--	1150	7.5	11.5
29...	88	1.6	715	.97	360	230	2.3	1150	7.8	11.5
29...	88	--	--	--	--	--	--	1150	7.5	11.5
29...	88	--	--	--	--	--	--	1150	7.4	11.5
AUG.										
30...	98	.3	733	1.00	340	240	2.6	1150	8.0	29.5
30...	98	--	--	--	--	--	--	1150	7.7	29.0
30...	98	--	--	--	--	--	--	1150	7.9	29.0
30...	94	1.8	738	1.00	360	230	2.5	1160	7.5	19.5
30...	94	--	--	--	--	--	--	1160	7.6	15.5
30...	93	2.0	72[illegible]	1.00	360	230	2.5	1160	7.7	13.0
30...	90	2.1	717	.98	350	220	2.3	1130	7.7	12.0
30...	89	2.0	716	.97	350	220	2.3	1130	7.8	11.5
30...	89	--	--	--	--	--	--	1130	7.7	11.5
30...	90	--	--	--	--	--	--	1130	7.7	11.5
30...	90	1.7	716	.97	360	230	2.3	1130	7.5	11.5
30...	90	--	--	--	--	--	--	1130	7.5	11.5
SEP.										
29...	95	.8	722	.98	330	230	2.6	1150	7.5	24.5
29...	95	--	--	--	--	--	--	1150	7.7	24.5
29...	96	.7	716	.97	340	240	2.6	1150	7.7	24.5
29...	92	2.0	723	.98	350	220	2.3	1160	7.5	20.5
29...	93	2.3	736	1.00	360	230	2.5	1180	7.8	17.0
29...	93	--	--	--	--	--	--	1180	7.8	14.5
29...	89	2.2	714	.97	350	220	2.3	1150	7.7	13.0
29...	89	2.3	714	.97	350	220	2.3	1150	7.7	13.0
29...	89	--	--	--	--	--	--	1150	7.7	12.5
29...	89	--	--	--	--	--	--	1150	7.6	12.0
29...	89	1.9	706	.96	350	220	2.3	1150	7.6	12.0
29...	88	--	--	--	--	--	--	1150	7.5	12.0

09421500 COLORADO RIVER BELOW HOOVER DAM, ARIZ.-NEV.
(Irrigation network station)

LOCATION.--Lat 36°00'55", long 114°44'16", in NE¼SW¼ sec.3, T.30 N., R.23 W., Gila and Salt River merdian, Mohave County, Ariz., or in SW¼NE¼ sec.29, T.22 S., R.65 E., Mount Diablo meridian, Clark County, Nev., 0.3 mile downstream from gaging station in powerhouse at downstream side of Hoover Dam.

DRAINAGE AREA.--167,800 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: October 1939 to September 1971.
Water temperatures: October 1941 to September 1965.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)
OCT. 19...	1230	7560	9.4	--	96	27	109	--	4.8
NOV. 23...	1330	5760	12	--	96	28	--	127	--
DEC. 14...	1315	10000	12	480	95	29	120	--	5.9
JAN. 12...	1130	13200	10	110	94	35	120	--	6.1
FEB. 08...	1310	18100	10	90	89	34	110	--	5.2
MAR. 09...	1450	19500	9.0	140	88	32	120	--	5.4
APR. 19...	1330	18700	9.7	30	93	31	110	--	5.1
MAY 10...	1330	24000	9.0	10	95	33	110	--	5.0
JUNE 14...	1400	18400	9.1	10	88	33	110	--	4.7
JULY 20...	1105	16200	9.1	10	90	34	97	--	4.5
AUG. 16...	1510	19600	9.7	10	88	30	110	--	4.9
SEP. 20...	1450	15900	9.2	10	91	29	110	--	4.7

DATE	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)
OCT. 19...	165	0	320	93	.6	.90	--	180	747
NOV. 23...	166	0	332	104	--	.56	--	--	786
DEC. 14...	161	0	360	95	.6	1.1	.00	210	--
JAN. 12...	156	0	360	95	.4	1.0	.00	160	--
FEB. 08...	160	0	300	100	.4	1.0	.05	160	--
MAR. 09...	168	0	310	96	.4	.00	.03	160	760
APR. 19...	198	0	330	94	.4	.50	.03	150	768
MAY 10...	163	0	330	110	.3	.70	.09	150	776
JUNE 14...	166	0	310	94	.4	.67	.06	100	758
JULY 20...	197	0	300	85	.3	.69	.00	210	760
AUG. 16...	165	0	310	88	.1	.70	.03	150	756
SEP. 20...	174	0	310	93	.5	.72	.03	150	760

09421500 COLORADO RIVER BELOW HOOVER DAM, ARIZ.-NEV.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
OCT. 19...	745	1.02	352	217	2.5	1150	8.0	15.0
NOV. 23...	784	1.07	354	218	2.9	1210	7.9	17.5
DEC. 14...	800	1.09	360	228	2.8	1170	7.7	16.0
JAN. 12...	800	1.09	380	252	2.7	1160	7.7	13.0
FEB. 08...	730	.99	360	229	2.5	1160	7.7	12.5
MAR. 09...	740	1.03	350	212	2.8	1160	8.2	12.0
APR. 19...	773	1.04	360	200	2.5	1160	8.0	13.0
MAY 10...	776	1.06	370	240	2.5	1170	8.0	13.5
JUNE 14...	734	1.03	360	220	2.5	1160	7.8	12.0
JULY 20...	720	1.03	360	200	2.2	1150	6.9	13.0
AUG. 16...	725	1.03	340	210	2.6	1130	7.8	13.0
SEP. 20...	736	1.03	350	200	2.6	1170	7.8	13.0

FIELD DETERMINATIONS OF WATER QUALITY, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	AIR TEMP-ERATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)
OCT. 19...	1230	7560	--	7.6	15.0	30.5	--
NOV. 23...	1330	5760	1100	8.0	17.5	21.5	7.0
DEC. 14...	1315	10000	1160	8.1	16.0	17.0	6.6
JAN. 12...	1130	13200	1000	8.1	13.0	12.5	9.6
FEB. 08...	1310	18100	1160	8.2	12.5	14.0	9.4
MAR. 09...	1450	19500	1160	8.2	12.0	21.5	9.8
APR. 19...	1330	18700	1100	8.2	13.0	20.0	9.2
MAY 10...	1330	24000	1270	7.8	13.5	29.0	9.4
JUNE 14...	1400	18400	1010	7.8	12.0	38.0	8.1
JULY 20...	1105	16200	1100	8.1	13.0	38.5	8.6
AUG. 16...	1510	19600	1100	8.1	13.0	41.5	7.3
SEP. 20...	1450	15900	1160	8.1	13.0	27.5	7.4

09423000 COLORADO RIVER BELOW DAVIS DAM, ARIZ.-NEV.

LOCATION.--Lat 35°11'30", long 114°34'17", in SE¼NE¼ sec.1, T.32 S., R.66 E., Mount Diablo meridian, in Clark County, Nev., at gaging station on right bank 0.5 mile downstream from Davis Dam, 29 miles west of Kingman, Ariz., and 68 miles downstream from Hoover Dam.

DRAINAGE AREA.--169,300 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: July 1969 to September 1971.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DISCHARGE (CFS)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED SODIUM PLUS POTASSIUM (MG/L)
OCT. 13...	1335	14100	7.0	--	90	31	--	113
NOV. 24...	1530	4950	7.0	--	86	33	--	117
JAN. 04...	1435	9040	10	60	92	33	120	--
FEB. 01...	1700	19500	9.1	110	90	33	110	--
MAR. 09...	1740	24140	9.1	100	85	32	120	--
APR. 19...	1610	19130	6.8	20	90	32	120	--
MAY 10...	1745	18810	7.5	30	92	33	110	--
JUNE 14...	1700	24020	8.2	20	87	34	110	--
JULY 20...	1610	20500	5.7	10	94	32	110	--
AUG. 16...	1810	19780	8.8	10	87	30	110	--
SEP. 20...	1800	19310	9.1	0	86	32	110	--

DATE	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED NITRITE PLUS NITRATE (N) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED SOLIDS (RESIDUE AT 180°C) (MG/L)
OCT. 13...	--	144	0	335	91	--	--	--	786
NOV. 24...	--	152	0	335	93	--	--	--	780
JAN. 04...	5.8	159	0	360	91	.4	.90	--	772
FEB. 01...	6.4	163	0	300	98	.5	.10	150	760
MAR. 09...	5.4	165	0	330	100	.4	.50	150	792
APR. 19...	5.2	164	0	340	97	.5	.60	100	776
MAY 10...	5.1	162	0	340	110	.2	.50	170	840
JUNE 14...	4.8	178	0	320	100	.4	.51	100	792
JULY 20...	4.8	165	0	320	94	.4	.04	200	760
AUG. 16...	4.9	159	0	320	91	.1	.43	150	742
SEP. 20...	5.5	160	0	320	99	.4	.36	170	784

09423000 COLORADO RIVER BELOW DAVIS DAM, ARIZ.-NEV.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)
OCT.								
13...	739	1.07	350	232	2.6	1160	8.1	19.0
NOV.								
24...	747	1.06	350	226	2.7	1180	8.2	--
JAN.								
04...	790	1.05	360	230	2.7	1150	8.0	10.0
FEB.								
01...	730	1.03	360	226	2.5	1140	8.2	--
MAR.								
09...	760	1.08	340	205	2.8	1180	8.0	11.0
APR.								
19...	775	1.05	360	220	2.8	1180	8.2	15.0
MAY								
10...	780	1.06	370	230	2.5	1190	8.1	17.0
JUNE								
14...	754	1.08	360	210	2.5	1190	7.7	18.0
JULY								
20...	742	1.03	370	230	2.5	1150	8.0	18.5
AUG.								
16...	732	1.01	340	210	2.6	1140	7.5	21.0
SEP.								
20...	742	1.07	350	220	2.6	1170	7.6	20.0

FIELD DETERMINATIONS OF WATER QUALITY, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	AIR TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)
OCT.							
19...	1600	14200	--	8.1	19.5	30.5	--
NOV.							
23...	1600	9780	1080	8.2	15.5	23.5	9.4
DEC.							
14...	1600	--	--	8.5	13.5	16.0	9.5
FEB.							
08...	1530	8490	1055	8.3	11.0	20.0	11.1
09...	0715	--	--	--	--	--	--
MAR.							
09...	1740	24140	1030	8.3	11.0	22.5	10.4
10...	0800	13770	--	--	11.0	9.0	--
APR.							
19...	1610	19130	1200	8.4	15.0	22.5	10.1
20...	0645	9990	--	--	13.5	11.0	--
MAY							
10...	1745	18810	--	8.2	17.0	28.0	11.0
JUNE							
14...	1700	24020	1160	7.2	18.0	38.0	8.9
15...	0710	7930	--	--	17.0	23.0	--
JULY							
20...	1610	20500	1260	8.1	18.5	28.0	6.6
21...	0745	9140	--	--	17.0	31.0	--
AUG.							
16...	1810	19780	1180	8.1	21.0	28.0	7.3
17...	0800	5880	--	--	18.0	31.0	--
SEP.							
20...	1800	19310	1140	8.0	20.0	31.0	6.6
21...	0815	11980	--	--	19.0	24.0	--

09424000 COLORADO RIVER NEAR TOPOCK, ARIZ.

LOCATION.--Lat 34°41'15", long 114°27'43", in SW¼NW¼ sec. 13, T. 15 N., R. 21 W., Mohave County, at gaging station on left bank in Mohave Canyon, 2.7 miles downstream from Topock, 39.5 miles upstream from Parker Dam, and 49 miles downstream from Davis Dam.

DRAINAGE AREA.--172,300 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: August 1969 to September 1971.
Water temperatures: July 1952 to July 1962.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)
OCT. 14...	0855	--	7.0	--	86	31	--	118
NOV. 25...	1210	6860	7.0	--	86	35	--	114
JAN. 07...	1130	--	6.0	--	86	33	--	113
FEB. 01...	--	6560	6.0	--	90	33	--	112
MAR. 02...	0900	12300	7.0	--	89	31	--	115
APR. 01...	0750	--	6.0	--	92	32	--	113
MAY 04...	1015	14840	5.0	--	89	32	--	116
JUNE 02...	--	15110	7.0	--	87	34	--	113
JULY 15...	0935	17810	8.9	10	97	33	110	--
AUG. 03...	0945	--	9.1	220	--	32	110	--
SEP. 20...	1015	13570	9.0	5	82	33	110	--

DATE	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)
OCT. 14...	--	144	0	335	93	--	--	--	764
NOV. 25...	--	152	0	340	92	--	--	--	776
JAN. 07...	--	154	0	330	90	--	--	--	780
FEB. 01...	--	160	0	330	92	--	--	--	788
MAR. 02...	--	158	0	330	91	--	--	--	792
APR. 01...	--	156	0	335	91	--	--	--	774
MAY 04...	--	158	0	335	91	--	--	--	768
JUNE 02...	--	160	0	330	90	--	--	--	772
JULY 15...	4.7	165	0	350	97	.5	.48	150	778
AUG. 03...	4.9	170	0	--	98	.4	.46	140	776
SEP. 20...	5.1	143	0	330	99	.3	.24	250	--

09424000 COLORADO RIVER NEAR TOPOCK, ARIZ.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
OCT. 14...	742	1.04	340	222	2.8	1160	8.0	19.0
NOV. 25...	750	1.06	360	236	2.6	1180	8.1	--
JAN. 07...	735	1.06	350	224	2.6	1180	8.2	8.0
FEB. 01...	743	1.07	360	229	2.6	1180	8.1	--
MAR. 02...	742	1.08	350	220	2.7	1180	8.3	10.0
APR. 01...	747	1.05	360	232	2.6	1170	8.3	15.5
MAY 04...	748	1.04	355	226	2.7	1170	8.2	16.5
JUNE 02...	741	1.05	355	224	2.6	1170	8.0	17.5
JULY 15...	760	1.06	380	240	2.5	1170	7.8	21.0
AUG. 03...	--	1.06	--	--	--	1120	7.5	20.0
SEP. 20...	740	1.01	340	220	2.6	1180	8.0	22.0

09427520 COLORADO RIVER BELOW PARKER DAM, ARIZ.-CALIF.

LOCATION.--Lat 34°17'44", long 114°08'22", in NW¼NW¼ sec. 3, T. 2 N., R. 27 E., San Bernardino meridian, San Bernardino County, Calif., at gaging station, at Parker Dam, 13 miles northeast of Parker, Ariz., and 14 miles upstream from Headgate Rock Dam.

DRAINAGE AREA.--178,800 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: October 1963 to September 1971.
Water temperatures: February 1954 to August 1970.
Prior to October 1968, published as 09428000.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)
OCT.									
05...	1530	13900	8.0	--	86	31	--	121	--
20...	1000	4510	9.0	--	96	28	114	--	5.1
NOV.									
02...	1520	9100	9.0	--	86	33	--	121	--
24...	1015	5310	9.2	--	95	26	--	125	--
DEC.									
07...	0810	5000	8.0	--	85	34	--	125	--
15...	1030	4670	10	50	91	33	120	--	6.1
JAN.									
14...	--	--	9.0	140	87	39	120	--	5.3
FEB.									
01...	0830	14300	8.8	160	76	34	120	--	5.6
MAR.									
01...	1020	14100	8.7	20	91	33	110	--	5.0
APR.									
07...	1020	15100	8.7	10	91	34	120	--	5.3
MAY									
05...	1020	6000	7.3	40	92	33	120	--	5.2
JUNE									
09...	1030	13300	7.6	10	88	33	100	--	5.2
AUG.									
16...	1030	14000	9.9	10	88	33	110	--	5.1
SEP.									
07...	1330	130[illegible]	9.8	10	83	31	110	--	5.2

DATE	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRATE (NO3) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED BORON (B) (UG/L)
OCT.									
05...	144	0	340	94	--	--	--	--	--
20...	146	0	333	101	.4	1.5	.34	--	190
NOV.									
02...	146	0	345	95	--	--	--	--	--
24...	153	0	334	101	--	.9	.20	--	--
DEC.									
07...	150	0	350	95	--	--	--	--	--
15...	153	0	380	95	.4	--	.70	--	170
JAN.									
14...	167	0	320	140	.4	--	.60	.01	160
FEB.									
01...	165	0	340	100	.5	--	.20	--	150
MAR.									
01...	168	0	340	80	.6	--	.40	--	140
APR.									
07...	164	0	340	100	.3	--	.80	--	110
MAY									
05...	166	0	330	110	.3	--	.40	--	150
JUNE									
09...	165	0	320	100	.3	--	.40	--	160
AUG.									
16...	160	0	330	100	.7	--	.37	--	150
SEP.									
07...	163	0	320	96	.4	--	.30	--	140

09427520 COLORADO RIVER BELOW PARKER DAM, ARIZ.-CALIF.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC-COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEM-PERATURE (DEG C)
OCT.									
05...	792	752	1.08	340	222	2.8	1170	8.1	--
20...	760	760	1.03	354	234	2.6	1160	8.0	21.5
NOV.									
02...	788	762	1.07	350	230	2.8	1190	8.1	--
24...	765	766	1.04	344	218	2.9	1170	8.1	16.0
DEC.									
07...	780	772	1.06	350	227	2.9	1190	8.1	--
15...	--	800	1.09	340	214	2.7	1170	7.8	14.0
JAN.									
14...	808	800	1.10	380	243	2.7	1180	8.2	--
FEB.									
01...	752	770	1.02	330	195	2.9	1190	8.4	--
MAR.									
01...	788	753	1.07	360	230	2.5	1130	8.4	--
APR.									
07...	800	784	1.09	370	230	2.7	1190	8.0	--
MAY									
05...	804	781	1.09	370	230	2.7	1180	8.1	--
JUNE									
09...	790	737	1.07	360	220	2.3	1180	8.1	--
AUG.									
16...	766	757	1.04	360	220	2.5	1170	7.9	--
SEP.									
07...	736	737	1.00	330	200	2.6	1140	7.5	--

FIELD DETERMINATIONS OF WATER QUALITY, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	AIR TEMP-ERATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)
OCT.							
20...	1000	4510	--	8.3	21.5	26.5	--
NOV.							
24...	1015	5310	1050	8.4	16.0	17.0	9.3
DEC.							
15...	1030	4670	1160	8.6	14.0	15.0	9.1
JAN.							
11...	1545	4480	1070	8.3	9.0	20.0	10.6
FEB.							
09...	0950	10500	1225	8.3	11.0	14.5	10.4
MAR.							
10...	1145	13780	1130	8.3	13.0	18.0	10.4
APR.							
20...	1000	14430	1240	8.4	18.0	20.0	9.6
MAY							
11...	1100	13900	--	--	21.0	28.5	9.4
JUNE							
15...	1020	14020	1360	8.1	23.5	36.0	9.0
JULY							
21...	1030	18700	1020	--	25.0	39.0	8.0
AUG.							
17...	1050	16370	1180	8.0	26.0	37.0	7.3
SEP.							
21...	1130	13860	1160	8.0	24.0	27.0	7.1

09428500 COLORADO RIVER INDIAN RESERVATION MAIN CANAL NEAR PARKER, ARIZ.

LOCATION.--Lat 34°10'04", long 114°16'33", in SE¼NW¼ sec. 31, T. 10 N., R. 19 W., Yuma County, at gaging station at Arizona end of Headgate Rock Dam, on Colorado River Indian Reservation, 1.7 miles northeast of Parker, and 14 miles downstream from Parker Dam.

PERIOD OF RECORD.--Chemical analyses: October 1969 to September 1971.

REMARKS.--Unpublished miscellaneous chemical analyses for water years 1962-63 available from district office in Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DISCHARGE (CFS)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED SODIUM PLUS POTASSIUM (MG/L)
OCT. 05...	0830	800	8.0	--	85	31	--	121
NOV. 02...	1600	600	8.0	--	87	32	--	119
DEC. 07...	1630	500	7.0	--	86	33	--	123
JAN. 14...	--	--	8.8	110	87	36	120	--
MAR. 03...	1700	950	8.6	20	93	34	110	--
MAY 05...	1630	1100	7.1	10	92	33	120	--
JUNE 16...	1630	1000	7.6	40	91	32	110	--
AUG. 16...	--	--	10	10	91	33	120	--
SEP. 07...	1300	--	9.9	10	84	31	110	--

DATE	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED NITRITE PLUS NITRATE (N) (MG/L)	DISSOLVED ORTHO PHOSPHATE (PO4) (MG/L)	DISSOLVED BORON (B) (UG/L)
OCT. 05...	--	144	0	340	93	--	--	--	--
NOV. 02...	--	144	0	340	97	--	--	--	--
DEC. 07...	--	148	0	350	94	--	--	--	--
JAN. 14...	5.8	156	0	320	140	.4	.60	.01	150
MAR. 03...	5.2	167	0	330	84	.6	.40	--	140
MAY 05...	5.4	159	0	320	120	.3	.50	--	150
JUNE 16...	5.2	171	0	310	96	.3	.44	--	160
AUG. 16...	5.3	164	0	330	110	.6	.39	--	160
SEP. 07...	5.4	173	0	320	97	.3	.31	--	140

09428500 COLORADO RIVER INDIAN RESERVATION MAIN CANAL NEAR PARKER, ARIZ.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DISSOLVED SOLIDS (RESIDUE AT 180 °C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	HARDNESS (CA,MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT.								
05...	784	750	1.07	340	222	2.9	1170	8.1
NOV.								
02...	768	755	1.04	350	232	2.8	1190	8.1
DEC.								
07...	774	767	1.05	350	228	2.9	1190	8.1
JAN.								
14...	792	800	1.08	360	232	2.7	1180	8.1
MAR.								
03...	792	749	1.02	370	240	2.5	1130	8.4
MAY								
05...	816	778	1.11	370	240	2.7	1190	8.0
JUNE								
16...	794	738	1.08	360	220	2.5	1180	8.1
AUG.								
16...	776	782	1.06	360	230	2.7	1180	7.8
SEP.								
07...	746	744	1.01	340	200	2.6	1150	7.7

09428510 POSTON WASTEWAY NEAR POSTON, ARIZ.

LOCATION.--Lat 33°59'58", long 114°26'41", in SW¼SE¼ sec.28, T.8 N., R.21 W., Yuma County, at gaging station 0.8 mile upstream from mouth, 2.5 miles west of Poston, and 14 miles southwest of Parker.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)
OCT.												
05...	--	14	--	144	44	--	190	--	264	0	480	170
NOV.												
02...	--	14	--	140	44	--	206	--	252	0	500	178
DEC.												
07...	--	16	--	145	48	--	210	--	258	0	530	180
JAN.												
04...	--	20	100	150	57	210	--	5.9	278	0	500	210
FEB.												
03...	--	21	120	160	54	240	--	6.5	312	0	520	240
MAR.												
03...	--	15	20	130	45	190	--	5.3	244	0	480	160
APR.												
07...	--	13	20	130	46	180	--	5.4	231	0	460	160
MAY												
05...	--	21	30	130	40	180	--	4.1	232	0	420	200
JUNE												
09...	--	14	30	120	44	170	--	5.4	200	0	460	180
AUG.												
16...	--	14	5	120	40	150	--	5.4	208	0	400	140
SEP.												
07...	1200	16	10	120	42	170	--	5.4	240	0	430	160

09428510 POSTON WASTEWAY NEAR POSTON, ARIZ.--Continued

PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1971.

REMARKS.--Unpublished miscellaneous chemical analyses for water years 1965-68 available from district office in Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
OCT.												
05...	--	--	--	--	1270	1170	1.73	540	324	3.6	1830	8.1
NOV.												
02...	--	--	--	--	1260	1210	1.71	530	324	3.9	1810	8.1
DEC.												
07...	--	--	--	--	1310	1260	1.78	560	348	3.9	1900	8.1
JAN.												
04...	.6	.60	.02	260	1370	1300	1.86	600	372	3.7	1960	8.2
FEB.												
03...	.7	.50	--	270	1470	1400	2.00	570	314	4.2	2110	8.3
MAR.												
03...	1.1	.30	--	220	1200	1150	1.63	510	310	3.7	1630	8.2
APR.												
07...	.4	.30	--	170	1140	1110	1.55	510	320	3.5	1640	8.0
MAY												
05...	.3	.10	--	170	1200	1110	1.63	490	300	3.5	1730	8.0
JUNE												
09...	.4	.02	--	230	1160	1090	1.58	480	320	3.4	1670	7.9
AUG.												
16...	.6	.27	--	190	986	974	1.34	460	290	3.0	1460	7.8
SEP.												
07...	.4	2.0	--	190	1120	1070	1.52	470	280	3.4	1580	8.0

09429000 PALO VERDE CANAL NEAR BLYTHE, CALIF.

LOCATION.--Lat 33°43'54", long 114°30'43", in SE¼NE¼NW¼ sec. 19, T. 5 S., R. 24 E., San Bernardino meridian, Riverside County, at gaging station at canal intake structure on west side of Palo Verde Dam, 10 miles northeast of Blythe, and 43 miles downstream from Headgate Rock Dam.

PERIOD OF RECORD.--Chemical analyses: March 1970 to September 1971.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)
OCT. 05...	0630	8.0	--	89	31	--	121	--
NOV. 02...	0845	8.0	--	87	35	--	123	--
DEC. 07...	0730	7.0	--	90	35	--	116	--
JAN. 14...	--	9.8	120	96	36	130	--	5.6
FEB. 01...	1000	9.0	140	89	32	120	--	5.6
MAR. 01...	1030	8.5	20	91	33	110	--	5.2
APR. 07...	1500	8.2	20	94	36	120	--	5.3
MAY 05...	0830	6.9	20	93	33	120	--	5.1
JUNE 09...	1100	7.2	10	95	32	110	--	5.3
AUG. 16...	--	10	10	92	33	120	--	5.1
SEP. 07...	1050	10	10	87	32	120	--	5.2

DATE	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 °C) (MG/L)
OCT. 05...	144	0	345	97	--	--	--	--	796
NOV. 02...	148	0	350	100	--	--	--	--	812
DEC. 07...	154	0	345	97	--	--	--	--	804
JAN. 14...	169	0	340	150	.5	.30	.32	180	860
FEB. 01...	162	0	320	100	.6	.10	--	160	780
MAR. 01...	169	0	340	83	.7	.50	--	150	792
APR. 07...	166	0	330	110	.4	.40	--	110	820
MAY 05...	167	0	330	120	.3	.40	--	130	808
JUNE 09...	173	0	320	100	.3	.40	--	160	818
AUG. 16...	158	0	350	100	.6	.34	--	160	782
SEP. 07...	172	0	340	97	.3	.29	--	140	754

09429000 PALO VERDE CANAL NEAR BLYTHE, CALIF.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)
OCT. 05...	763	1.08	350	232	2.8	1180	8.1	--
NOV. 02...	777	1.10	360	238	2.8	1220	8.2	17.0
DEC. 07...	767	1.09	370	244	2.6	1220	8.2	12.0
JAN. 14...	850	1.17	390	251	2.9	1270	7.9	--
FEB. 01...	760	1.06	350	217	2.8	1200	8.2	10.0
MAR. 01...	757	1.08	360	220	2.5	1140	8.3	10.0
APR. 07...	787	1.12	380	250	2.7	1200	8.2	17.0
MAY 05...	792	1.10	370	230	2.7	1190	8.0	17.0
JUNE 09...	757	1.11	370	230	2.5	1190	8.2	18.0
AUG. 16...	790	1.06	370	240	2.7	1180	7.9	--
SEP. 07...	778	1.03	350	210	2.8	1160	7.7	--

09429030 PALO VERDE DRAIN NEAR PARKER, ARIZ.

LOCATION.--Lat 33°45'25'', long 114°29'48'', in NE¼SW¼ sec.24, T.5 N., R.22 W., Yuma County, at bridge, 0.5 mile above mouth, 0.5 mile northeast of Palo Verde Dam, 9 miles north of Ehrenberg, and 31 miles southwest of Parker.

PERIOD OF RECORD.--October 1968 to September 1971.

REMARKS.--Unpublished miscellaneous chemical analyses for water years 1962-68 available from district office in Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)
OCT. 05...	--	18	--	132	39	--	167	--	222	0	430	158
NOV. 02...	--	18	--	137	41	--	183	--	224	0	450	182
DEC. 07...	--	19	--	137	41	--	174	--	228	0	450	165
JAN. 04...	--	21	100	130	43	160	--	4.7	224	0	420	140
FEB. 03...	--	22	140	130	36	160	--	4.7	221	0	390	160
MAR. 03...	--	21	30	130	39	170	--	4.2	224	0	430	160
APR. 07...	--	23	20	130	47	170	--	4.2	228	0	420	170
MAY 05...	--	15	10	130	47	170	--	5.6	120	0	490	170
JUNE 09...	--	22	20	120	42	170	--	4.4	186	0	400	180
AUG. 16...	--	24	5	150	46	200	--	4.4	250	0	510	230
SEP. 07...	1120	24	10	150	44	200	--	4.3	271	0	500	210

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
OCT. 05...	--	--	--	--	1100	1060	1.50	490	308	3.3	1630	8.2
NOV. 02...	--	--	--	--	1180	1120	1.60	510	326	3.5	1710	8.2
DEC. 07...	--	--	--	--	1150	1100	1.56	510	323	3.3	1700	8.1
JAN. 04...	.4	.50	.14	170	1080	1000	1.47	490	306	3.1	1630	8.2
FEB. 03...	.5	.10	--	170	1050	1000	1.43	480	299	3.2	1590	8.2
MAR. 03...	.5	.20	--	170	1070	1070	1.46	480	300	3.4	1530	8.3
APR. 07...	.6	.20	--	150	1130	1080	1.54	520	330	3.3	1630	8.0
MAY 05...	.3	.30	--	220	1160	1090	1.58	520	420	3.3	1670	7.9
JUNE 09...	.3	.00	--	200	1150	1030	1.56	470	320	3.4	1670	8.0
AUG. 16...	.6	.01	--	210	1260	1290	1.71	560	360	3.7	1850	7.9
SEP. 07...	.4	.00	--	190	1300	1270	1.77	560	330	3.7	1860	7.8

09429060 LOWER MAIN DRAIN NEAR PARKER, ARIZ.

LOCATION.--Lat 33°45'40", long 114°29'05", in SW¼NW¼ sec. 19, T. 5 N., R. 21 W., Yuma County, at gaging station, 2.8 miles above outlet to Colorado River, and 31 miles south of Parker.

PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1971.

REMARKS.--Unpublished miscellaneous chemical analyses for water years 1962-68 available from district office in Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)
OCT. 05...	12	--	138	48	--	249	--	228	0	510	258	--
NOV. 02...	12	--	143	49	--	259	--	234	0	530	270	--
DEC. 07...	14	--	155	57	--	302	--	260	0	590	320	--
JAN. 04...	17	110	150	64	290	--	7.9	266	0	580	330	.7
FEB. 03...	22	70	190	71	490	--	7.7	324	0	700	540	1.1
MAR. 03...	16	20	150	55	310	--	6.0	263	0	580	320	1.0
APR. 07...	17	20	150	56	320	--	6.4	273	0	580	340	.7
MAY 05...	18	10	160	61	340	--	6.5	264	0	620	420	.6
JUNE 09...	17	20	150	58	350	--	6.6	489	0	410	380	.7
AUG. 16...	16	10	130	45	220	--	6.0	230	0	470	250	.8
SEP. 07...	19	20	150	53	290	--	5.8	285	0	580	330	.6

DATE	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
OCT. 05...	--	--	--	1460	1330	1.99	540	353	4.7	2130	8.0
NOV. 02...	--	--	--	1460	1380	1.99	560	368	4.8	2140	8.1
DEC. 07...	--	--	--	1680	1570	2.28	620	407	5.3	2480	8.1
JAN. 04...	.70	.60	400	1660	1600	2.26	640	422	5.0	2440	8.1
FEB. 03...	.10	--	650	2300	2200	3.13	770	504	7.7	3350	8.3
MAR. 03...	.40	--	420	1640	1570	2.23	600	390	5.5	2250	8.3
APR. 07...	.50	--	390	1670	1610	2.27	600	380	5.7	2420	8.2
MAY 05...	.40	--	430	1810	1760	2.46	650	430	5.8	2580	7.9
JUNE 09...	.10	--	470	1810	1610	2.46	610	210	6.2	2600	7.7
AUG. 16...	.25	--	290	1270	1250	1.73	510	320	4.2	1860	8.1
SEP. 07...	.31	--	380	1620	1570	2.20	590	360	5.2	2320	7.7

09429130 PALO VERDE IRRIGATION DISTRICT OLIVE LAKE DRAIN NEAR BLYTHE, CALIF.

LOCATION.--Lat 33°40'36'', long 114°32'09'', in SW¼SW¼ sec. 1, T. 6 S., R. 23 E., San Bernardino meridian, Riverside County, 0.3 mile upstream from mouth, and 5 miles northeast of Blythe.

PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1970 (partial-record station), October 1970 to September 1971.

REMARKS.--Unpublished miscellaneous chemical analyses for water years 1962-68 available from district office in Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)
OCT. 14...	1320	15	16	--	143	40	--	155	--
JAN. 13...	1345	5.1	18	120	130	46	150	--	6.0
FEB. 11...	1500	--	19	120	140	45	170	--	6.3
MAR. 15...	1430	--	18	80	140	41	170	--	6.6
APR. 12...	1500	14	16	30	140	41	160	--	5.4
MAY 03...	1045	--	20	20	140	43	180	--	6.0
JUNE 09...	1415	16	18	20	140	42	140	--	5.9
JULY 13...	1125	15	19	10	140	43	150	--	5.0
AUG. 02...	0900	--	17	10	130	39	150	--	5.4
SEP. 01...	0800	--	20	10	140	40	150	--	5.5

DATE	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180° C) (MG/L)
OCT. 14...	280	0	425	132	--	--	--	--	1080
JAN. 13...	253	0	490	120	.4	.40	9.1	200	1110
FEB. 11...	263	0	440	155	.4	.10	--	190	1110
MAR. 15...	288	0	430	150	.4	.10	--	210	1110
APR. 12...	263	0	420	140	.4	.20	--	130	1060
MAY 03...	284	0	460	170	.7	.00	--	220	1100
JUNE 09...	206	0	450	130	.4	.09	--	150	1120
JULY 13...	288	0	420	130	.6	.15	--	190	1060
AUG. 02...	278	0	410	130	.4	.24	--	180	1060
SEP. 01...	290	0	410	120	.3	.40	--	240	1090

09429130 PALO VERDE IRRIGATION DISTRICT OLIVE LAKE DRAIN NEAR BLYTHE, CALIF.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
OCT. 14...	1050	1.47	520	290	3.0	1590	8.1	18.0
JAN. 13...	1100	1.51	510	302	2.9	1590	8.2	--
FEB. 11...	1100	1.51	520	304	3.2	1550	8.2	22.0
MAR. 15...	1100	1.51	520	284	3.2	1600	8.3	--
APR. 12...	1050	1.44	520	300	3.1	1540	8.3	25.0
MAY 03...	1160	1.50	530	290	3.4	1590	7.9	21.0
JUNE 09...	1030	1.52	520	350	2.7	1610	7.9	25.0
JULY 13...	1050	1.44	530	290	2.8	1571	8.0	24.0
AUG. 02...	1020	1.44	480	260	3.0	1530	7.4	24.0
SEP. 01...	1030	1.48	510	280	2.9	1610	7.6	22.0

09429188 COLORADO RIVER AT TAYLOR FERRY, CALIF.

LOCATION.--Lat 33°26'03'', long 114°37'35'', in SE¼ sec. 36, T. 8 S., R. 22 E., San Bernardino meridian, Riverside County, at gaging station, at site of old Taylor Ferry, 2.5 miles upstream from Cibola Bridge, 12 miles south of Blythe, Calif., 28 miles downstream from Palo Verde Dam, and 62 miles upstream from Imperial Dam.

DRAINAGE AREA.--183,700 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: April 1970 to September 1971.

REMARKS.--Gaging station operated by Bureau of Reclamation.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)
OCT. 05...	--	--	8.0	--	89	34	--	127	--
NOV. 02...	--	--	9.0	--	94	34	--	135	--
DEC. 07...	--	--	8.0	--	92	37	--	131	--
JAN. 04...	--	--	9.7	110	92	38	120	--	5.5
FEB. 03...	--	--	9.5	130	93	30	140	--	5.8
MAR. 03...	--	--	9.1	30	94	34	120	--	5.1
APR. 07...	--	--	8.7	10	97	33	120	--	5.1
MAY 05...	--	--	6.8	10	95	36	140	--	5.3
JUNE 09...	--	--	7.9	10	85	34	130	--	5.2
AUG. 16...	--	--	11	5	94	34	120	--	5.2
SEP. 07...	0630	7430	11	10	87	33	120	--	5.2

DATE	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)
OCT. 05...	152	0	350	105	--	--	--	--	816
NOV. 02...	164	0	360	113	--	--	--	--	868
DEC. 07...	160	0	370	106	--	--	--	--	840
JAN. 04...	172	0	360	110	.4	.60	.00	130	860
FEB. 03...	170	0	320	120	.4	.10	--	170	832
MAR. 03...	173	0	350	100	.7	.40	--	150	828
APR. 07...	165	0	350	110	.4	.60	--	110	832
MAY 05...	178	0	350	130	.3	.40	--	170	868
JUNE 09...	158	0	340	110	.3	.18	--	170	836
AUG. 16...	171	0	340	89	.6	.31	--	160	806
SEP. 07...	175	0	320	110	.4	.26	--	160	810

09429188 COLORADO RIVER AT TAYLOR FERRY, CALIF.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
OCT. 05...	789	1.11	360	236	2.9	1230	8.1	--
NOV. 02...	827	1.18	375	240	3.0	1300	8.2	--
DEC. 07...	824	1.14	380	249	2.9	1270	8.1	--
JAN. 04...	820	1.17	390	249	2.7	1270	8.2	--
FEB. 03...	800	1.13	360	221	3.2	1280	8.2	--
MAR. 03...	800	1.13	370	230	2.7	1190	8.2	--
APR. 07...	808	1.13	380	240	2.7	1230	8.4	--
MAY 05...	853	1.18	390	240	3.1	1280	8.0	--
JUNE 09...	791	1.14	350	220	3.0	1260	7.9	--
AUG. 16...	779	1.10	370	230	2.7	1240	8.0	--
SEP. 07...	774	1.10	350	210	2.8	1200	7.8	27.0

09429220 OUTFALL DRAIN NEAR PALO VERDE, CALIF.

LOCATION.--Lat 33°21'41", long 114°43'20", in SE¼SE¼ sec.26, T.9 S., R.21 E., San Bernardino meridian, Imperial County, at gaging station, at State Highway 78 bridge, 3.3 miles upstream from mouth, and 5 miles south of Palo Verde.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)
OCT. 05...	17	--	150	46	--	444	--	328	0	610	445
NOV. 02...	17	--	151	42	--	454	--	322	0	620	445
DEC. 07...	18	--	149	48	--	457	--	316	0	630	460
JAN. 04...	20	100	140	50	410	--	6.3	288	0	500	430
FEB. 03...	20	140	140	49	400	--	7.2	313	0	490	450
MAR. 03...	22	20	140	50	460	--	6.2	283	0	610	440
APR. 07...	22	40	150	51	490	--	6.6	329	0	630	470
MAY 05...	21	20	140	49	450	--	6.4	316	0	580	500
JUNE 09...	21	10	130	50	490	--	6.5	274	0	600	490
AUG. 16...	23	10	140	48	410	--	6.2	325	0	590	440
SEP. 07...	23	10	150	46	460	--	6.2	350	0	610	470

09429220 OUTFALL DRAIN NEAR PALO VERDE, CALIF.--Continued

PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1971.

REMARKS.--Unpublished miscellaneous chemical analyses for water years 1962-68 available from district office in Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
OCT. 05...	--	--	--	--	1960	1880	2.67	565	299	8.1	3000	8.2
NOV. 02...	--	--	--	--	1940	1890	2.64	550	286	8.4	2980	8.0
DEC. 07...	--	--	--	--	2000	1920	2.72	570	311	8.3	3070	8.1
JAN. 04...	1.1	.80	.18	540	1810	1700	2.46	550	314	7.6	2760	8.0
FEB. 03...	1.2	.10	--	590	1810	1700	2.46	550	293	7.4	2790	8.3
MAR. 03...	1.4	.20	--	600	1930	1870	2.62	560	320	8.5	2720	8.1
APR. 07...	1.2	.40	--	140	19[illegible]0	1980	2.69	580	310	8.8	3000	8.1
MAY 05...	1.8	.40	--	610	1890	1910	2.57	550	290	8.3	2860	7.9
JUNE 09...	1.2	.06	--	680	2000	1920	2.72	530	310	9.3	3000	8.1
AUG. 16	1.2	.36	--	580	1820	1820	2.48	550	280	7.6	2770	8.0
SEP. 07...	.1	.36	--	630	1960	1940	2.67	560	280	8.4	2970	7.7

09429225 ANDERSON DRAIN NEAR PALO VERDE, CALIF.

LOCATION.--Lat 33°21'19'', long 114°43'00'', in SW¼ sec. 36, T. 9 S., R. 21 E., San Bernardino meridian, Imperial County, 0.1 mile upstream from pump into Outfall Drain, and 5.5 miles south of Palo Verde.

PERIOD OF RECORD.--Chemical analyses: Water year 1969 (partial-record station), October 1969 to September 1971.

REMARKS.--Unpublished miscellaneous chemical analyses for water years 1966-68 available from district office in Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)
OCT. 15...	1230	10	21	--	198	99	--	2040	--
DEC. 01...	1500	--	23	--	214	118	--	2200	--
JAN. 11...	1500	--	26	140	190	99	2200	--	7.5
FEB. 10...	1530	--	22	140	150	77	1500	--	11
MAR. 01...	0955	--	26	120	330	160	3200	--	16
APR. 12...	1500	--	28	40	180	88	2200	--	10
MAY 03...	1540	--	31	50	180	93	2200	--	10
JUNE 09...	1135	--	26	40	130	62	1200	--	9.6
JULY 13...	0810	--	25	30	140	65	1000	--	8.6
AUG. 02...	1255	--	26	20	130	61	1200	--	8.5
SEP. 01...	1200	--	28	20	170	81	2000	--	8.7

DATE	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)
OCT. 15...	616	0	1570	2260	--	--	--	--	6730
DEC. 01...	632	0	1680	2510	--	--	--	--	7530
JAN. 11...	661	0	1600	2600	1.9	1.4	.19	3100	7080
FEB. 10...	608	0	1200	1600	1.8	.70	--	1900	4960
MAR. 01...	672	0	2200	4000	2.1	.10	--	1100	10400
APR. 12...	662	0	1400	2500	2.0	.30	--	2700	6940
MAY 03...	638	0	1700	2200	2.1	.00	--	1800	6360
JUNE 09...	532	0	1200	1200	1.8	.05	--	1800	3990
JULY 13...	568	0	1000	900	1.7	.46	--	1500	3480
AUG. 02...	576	0	930	1200	1.7	.10	--	4000	3770
SEP. 01...	680	0	1500	2000	.4	1.2	--	4600	6240

09429225 ANDERSON DRAIN NEAR PALO VERDE, CALIF.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
OCT. 15...	6500	9.15	900	395	30	10000	8.3	17.0
DEC. 01...	7060	10.2	1020	502	30	11300	7.9	21.0
JAN. 11...	7100	9.63	890	348	32	10600	8.4	--
FEB. 10...	4800	6.75	690	191	25	7280	8.0	--
MAR. 01...	10300	14.1	1500	949	36	15200	8.2	19.0
APR. 12...	6740	9.44	810	270	34	10400	7.9	27.0
MAY 03...	6730	8.65	830	310	33	9530	7.6	26.0
JUNE 09...	4090	5.43	580	140	22	6110	7.9	25.5
JULY 13...	3420	4.73	620	150	18	5300	8.2	23.0
AUG. 02...	3850	5.13	580	100	22	5700	7.4	27.0
SEP. 01...	6130	8.49	760	200	32	9650	7.6	24.0

09429300 COLORADO RIVER BELOW CIBOLA VALLEY, ARIZ.

LOCATION.--Lat 33°13'16", long 114°40'18", in NE¼SW¼ sec. 30, T. 2 S., R. 23 W., Yuma County, at gaging station on left bank 6.7 miles south of Cibola, 38 miles upstream from Imperial Dam, and 52 miles downstream from Palo Verde Dam.

DRAINAGE AREA.--183,800 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: January 1969 to September 1971.
Water temperatures: March 1956 to December 1966.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)
OCT.								
05...	--	8.0	--	94	33	--	157	--
20...	1510	8.0	--	92	33	--	133	--
NOV.								
02...	--	10	--	98	35	--	166	--
24...	0935	8.0	--	94	35	--	138	--
DEC.								
07...	--	10	--	102	35	--	162	--
JAN.								
04...	--	12	100	99	41	170	--	5.6
FEB.								
03...	--	11	110	100	36	190	--	6.0
MAR.								
03...	--	11	20	110	35	170	--	5.1
APR.								
07...	--	10	30	110	37	180	--	5.3
MAY								
05...	--	10	20	100	39	210	--	5.5
JUNE								
09...	--	7.9	20	94	34	120	--	5.2
AUG.								
16...	--	12	5	96	36	160	--	5.4
SEP.								
07...	--	11	10	86	33	120	--	5.2

DATE	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)
OCT.									
05...	164	0	380	129	--	--	--	--	928
20...	154	0	355	112	--	--	--	--	854
NOV.									
02...	176	0	390	142	--	--	--	--	976
24...	164	0	370	114	--	--	--	--	868
DEC.									
07...	178	0	400	135	--	--	--	--	962
JAN.									
04...	194	0	390	170	.6	.70	.04	230	1010
FEB.									
03...	192	0	360	170	.7	.20	--	210	988
MAR.									
03...	192	0	380	150	.7	.40	--	230	968
APR.									
07...	187	0	390	160	.7	.50	--	180	996
MAY									
05...	197	0	390	220	.4	.30	--	270	1110
JUNE									
09...	172	0	350	120	.3	.32	--	160	868
AUG.									
16...	182	0	370	150	.6	.32	--	210	920
SEP.									
07...	176	0	340	110	.4	.29	--	160	800

09429300 COLORADO RIVER BELOW CIBOLA VALLEY, ARIZ.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	HARD- NESS (CA,MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	SODIUM AD- SORP- TION RATIO	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH (UNITS)	TEMP- ERATURE (DEG C)
OCT.								
05...	883	1.26	370	236	3.5	1370	8.0	--
20...	810	1.16	365	238	3.0	1260	8.1	19.0
NOV.								
02...	929	1.33	390	246	3.7	1440	8.2	--
24...	841	1.18	380	246	3.1	1320	8.2	15.0
DEC.								
07...	933	1.31	400	254	3.5	1470	8.1	--
JAN.								
04...	980	1.37	420	261	3.6	1530	8.0	--
FEB.								
03...	970	1.34	400	242	4.1	1550	8.0	--
MAR.								
03...	958	1.32	420	260	3.6	1390	8.3	--
APR.								
07...	987	1.35	430	270	3.8	1490	8.1	--
MAY								
05...	1070	1.51	410	250	4.5	1650	8.0	--
JUNE								
09...	818	1.18	370	230	2.7	1250	8.0	--
AUG.								
16...	921	1.25	390	240	3.5	1410	8.2	--
SEP.								
07...	794	1.09	350	210	2.8	1200	7.6	--

09429500 COLORADO RIVER AT IMPERIAL DAM, ARIZ.-CALIF.

LOCATION.--Lat 32°53'29", long 114°27'57", in NW¼SW¼ sec.9, T.15 S., R.24 E., San Bernardino meridian, Imperial County, Calif., at gaging station near All-American Canal headworks at west end of Imperial Dam, 5 miles upstream from Laguna Dam, 15 miles northeast of Yuma, 90 miles downstream from Palo Verde Dam, and 147 miles downstream from Parker Dam.

DRAINAGE AREA.--184,600 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: August 1969 to September 1971.

EXTREMES.--1970-71:
Specific conductance: Maximum daily, 1,650 micromhos Dec. 3; minimum daily, 1,250 micromhos Aug. 22.

Period of record:
Specific conductance: Maximum daily, 1,880 micromhos Nov. 21, 1969; minimum daily, 1,250 micromhos Aug. 22, 1971.

REMARKS.--Stream discharges reported with analyses represent total flow reaching Imperial Dam. Daily specific conductance record furnished by Bureau of Reclamation. Since January 1971, daily specific-conductance measurements have been made using a composite of four water samples taken at 6-hour intervals. Once per month a daily composite of four water samples is analyzed for chemical constituents.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	MEAN DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)
OCT.									
05...	1230	--	9.0	--	94	33	--	158	--
22...A	1400	4880	--	--	100	36	160	--	5.8
NOV.									
02...	1230	--	10	--	100	34	--	157	--
27...A	1100	3590	--	--	100	36	160	--	5.9
DEC.									
07...	1230	--	9.0	--	102	35	--	175	--
JAN.									
18...	--	4360	11	100	100	40	160	--	5.0
FEB.									
01...	--	5510	12	140	93	37	170	--	6.1
MAR.									
01...	--	7580	11	10	96	36	150	--	5.3
APR.									
05...	--	11500	10	10	100	36	140	--	5.2
MAY									
05...	--	8810	8.9	40	95	36	160	--	5.6
JUNE									
09...	--	9530	8.8	20	96	35	140	--	5.4
JULY									
07...	--	11200	9.4	10	93	35	130	--	4.8
AUG.									
18...	--	9800	13	5	98	35	150	--	5.4
SEP.									
08...	--	8640	11	10	91	34	140	--	5.6

A Discharge at time of sampling.

09429500 COLORADO RIVER AT IMPERIAL DAM, ARIZ.-CALIF.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED NITRITE PLUS NITRATE (N) (MG/L)	DISSOLVED ORTHO PHOSPHATE (PO4) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED SOLIDS (RESIDUE AT 180°C) (MG/L)
OCT.									
05...	162	0	380	131	--	--	--	--	908
22...	182	0	380	150	--	--	--	--	982
NOV.									
02...	174	0	380	138	--	--	--	--	956
27...	188	0	390	150	--	--	--	--	990
DEC.									
07...	182	0	405	150	--	--	--	--	1020
JAN.									
18...	194	0	380	150	.5	.60	.02	210	980
FEB.									
01...	184	0	390	160	.6	.10	.00	230	948
MAR.									
01...	186	0	390	130	1.1	.40	.00	500	928
APR.									
05...	174	0	360	130	.5	.40	.00	140	900
MAY									
05...	173	0	340	160	.3	.40	.03	210	940
JUNE									
09...	187	0	360	140	.3	.32	.03	200	932
JULY									
07...	174	0	360	130	.4	.40	.06	190	880
AUG.									
18...	180	0	350	150	.6	.26	.03	200	892
SEP.									
08...	188	0	360	110	.4	.23	.03	240	872

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)
OCT.								
05...	886	1.23	370	237	3.6	1380	8.1	--
22...	--	1.34	400	250	--	1480	8.2	22.0
NOV.								
02...	906	1.30	390	248	3.5	1410	8.2	18.5
27...	--	1.35	400	250	3.5	1490	8.1	16.0
DEC.								
07...	967	1.39	400	251	2.5	1530	8.2	--
JAN.								
18...	946	1.33	420	261	3.4	1440	7.6	--
FEB.								
01...	960	1.29	380	229	3.8	1460	8.3	--
MAR.								
01...	913	1.26	390	240	3.3	1330	8.3	--
APR.								
05...	869	1.22	400	260	3.1	1340	8.1	--
MAY								
05...	893	1.28	390	240	3.5	1380	8.1	--
JUNE								
09...	879	1.27	380	230	3.1	1370	8.3	--
JULY								
07...	850	1.20	380	230	2.9	1320	7.6	--
AUG.								
18...	892	1.21	390	240	3.3	1370	8.0	--
SEP.								
08...	846	1.19	370	210	3.2	1330	7.9	--

09429500 COLORADO RIVER AT IMPERIAL DAM, ARIZ.-CALIF.--Continued

FIELD DETERMINATIONS OF WATER QUALITY, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	AIR TEMP-ERATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)
OCT.							
27...	1400	4876	--	8.2	22.0	--	9.0
NOV.							
24...	1030	--	--	--	--	--	--
27...	1100	3592	1400	8.5	16.0	21.0	9.6
DEC.							
15...	1130	--	--	--	--	--	--
21...	1330	4453	1150	--	12.5	16.5	--
JAN.							
14...	1500	4940	1090	8.4	10.0	17.0	10.6
FEB.							
09...	1145	--	--	--	--	--	--
10...	1315	7600	1430	8.4	13.0	23.0	9.7
MAR.							
08...	1420	9180	1310	8.4	15.0	26.5	9.8
11...	0850	10150	--	--	14.0	17.5	--
APR.							
20...	1125	--	--	--	18.0	--	--
21...	1515	9060	1540	8.3	18.0	21.0	9.6
MAY							
11...	1045	--	--	--	23.0	--	--
12...	1700	8940	--	8.3	25.5	41.5	9.5
JUNE							
15...	1105	--	--	--	27.0	--	--
16...	1355	10150	1350	8.1	27.0	40.0	8.1
JULY							
21...	1240	--	--	--	29.5	--	--
22...	1430	11430	1450	8.3	30.0	40.0	7.7
AUG.							
17...	0855	--	--	--	28.0	--	--
18...	1250	9870	1220	8.3	30.5	35.0	7.9
SEP.							
21...	0955	--	--	--	23.0	--	--
23...	1430	8540	1360	8.0	26.0	34.5	7.9

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1350	1460	1610	1520	1460	1390	1320	1400	1360	1340	1320	1380
2	1350	1400	1590	1520	1410	1360	1340	1410	1340	1340	1310	1400
3	1310	1400	1650	1540	1380	1370	1370	1390	1360	1350	1330	1400
4	1390	1460	1600	1500	1420	1380	1360	1390	1380	1350	1320	1400
5	1360	1430	1510	1480	1390	1340	1340	1390	1390	1320	1340	1400
6	1350	1450	1510	1470	1430	1330	1350	1420	1390	1340	1340	1380
7	1380	1480	1510	1420	1420	1350	1340	1430	1380	1340	1360	1380
8	1380	1510	1480	1380	1350	1320	1340	1440	1380	1320	1340	1360
9	1420	1480	1420	1370	1340	1330	1360	1440	1370	1320	1360	1340
10	1420	1440	1440	1400	1330	1330	1360	1380	1360	1330	1320	1330
11	1460	1440	1440	1430	1340	1320	1370	1350	1380	1330	1310	1330
12	1460	1400	1400	1440	1360	1320	1350	1350	1380	1290	1320	1360
13	1420	1420	1470	1460	1360	1350	1330	1360	1360	1310	1310	1350
14	1400	1470	1440	1480	1390	1330	1340	1380	1340	1310	1350	1340
15	1400	1500	1420	1490	1340	1320	1350	1410	1330	1330	1360	1360
16	1440	1500	1380	1500	1340	1320	1350	1420	1340	1330	1360	1390
17	1440	1480	1360	1520	1340	1320	1400	1400	1340	1330	1350	1390
18	1450	1440	1360	1460	1350	1340	1400	1360	1360	1320	1370	1390
19	1400	1390	1410	1480	1360	1340	1370	1370	1370	1320	1350	1410
20	1380	1380	1470	1460	1380	1340	1390	1350	1360	1330	1320	1380
21	1380	1410	1480	1450	1410	1340	1410	1380	1340	1330	1300	1370
22	1440	1480	1410	1440	1420	1320	1380	1410	1300	1370	1250	1330
23	1460	1410	1420	1440	1400	1320	1390	1420	1320	1340	1360	1320
24	1480	1410	1510	1460	1380	1320	1400	1380	1320	1340	1340	1340
25	1460	1430	1600	1470	1340	1320	1360	1360	1350	1320	1360	1340
26	1420	1490	1580	1440	1380	1370	1330	1350	1330	1300	1380	1380
27	1400	1560	1480	1440	1420	1360	1360	1380	1320	1310	1400	1360
28	1390	1620	1480	1440	1420	1380	1360	1410	1320	1320	1350	1330
29	1390	1640	1430	1430	---	1340	1370	1410	1320	1320	1360	1330
30	1400	1620	1420	1440	---	1340	1380	1420	1320	1330	1340	1320
31	1420	---	1470	1460	---	1320	---	1380	---	1320	1370	---
AVG	1410	1470	1480	1460	1380	1340	1360	1390	1350	1330	1340	1360

09429500 COLORADO RIVER AT IMPERIAL DAM, ARIZ.-CALIF.--Continued

RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-SOLVED GROSS ALPHA AS U-NAT. (PC/L)	SUS-PENDED GROSS ALPHA AS U-NAT. (PC/L)	DIS-SOLVED GROSS ALPHA AS U-NAT. (UG/L)	SUS-PENDED GROSS ALPHA AS U-NAT. (UG/L)	DIS-SOLVED GROSS BETA AS CS-137 (PC/L)	SUS-PENDED GROSS BETA AS CS-137 (PC/L)
JULY 26...	0835	<4.8	.3	<14	.8	12	1.5

DATE	DIS-SOLVED GROSS BETA AS SR90 /Y90 (PC/L)	SUS-PENDED GROSS BETA AS SR90 /Y90 (PC/L)	DIS-SOLVED RA-226 (RADON METHOD) (PC/L)	DIS-SOLVED NATURAL URANIUM (U) (UG/L)	TOTAL FILT-RABLE RESIDUE (MG/L)	TOTAL NON-FILT-RABLE RESIDUE (MG/L)
JULY 26...	9.8	1.3	.22	7.9	990	14

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	ALDRIN (UG/L)	CHLOR-DANE (UG/L)	DDD (UG/L)	DDE (UG/L)	DDT (UG/L)	DI-AZINON (UG/L)	DI-ELDRIN (UG/L)	ENDRIN (UG/L)
OCT. 27...	1100	--	.00	.0	.00	.00	.00	.00	.00	.00
NOV. 10...	1130	--	.00	.0	.00	.00	.00	.00	.00	.00
DEC. 01...	1015	--	.00	.0	.00	.00	.01	.00	.00	.00
JAN. 05...	0820	--	.00	.0	.00	.00	.00	.00	.00	.00
FEB. 02...	0930	--	.00	.0	.00	.00	.00	.00	.00	.00
APR. [illegible]...	0915	--	.00	.0	.00	.00	.00	.00	.00	.00
[illegible] 04...	1000	--	.00	.0	.00	.00	.00	.00	.00	.00
JUNE 01...	1030	--	.00	.0	.00	.00	.00	.00	.00	.00
JULY 06...	0835	--	.00	.0	.00	.00	.00	.00	.00	.00
AUG. 03...	0826	--	.00	.0	.00	.00	.00	.00	.00	.00
SEP. 07...	0815	520	.00	.0	.00	.00	.00	.00	.00	.00

DATE	HEPTA-CHLOR (UG/L)	HEPTA-CHLOR EPOXIDE (UG/L)	LINDANE (UG/L)	MALA-THION (UG/L)	METHYL PARA-THION (UG/L)	[illegible]THION (UG/L)	2,4-D (UG/L)	2,4,5-T (UG/L)	SILVEX (UG/L)
OCT. 27...	.00	.00	.00	.00	.00	.00	.00	.00	.00
NOV. 10...	.00	.00	.00	.00	.00	.00	.00	.00	.00
DEC. 01...	.00	.00	.00	.00	.00	.00	.00	.00	.00
JAN. 05...	.00	.00	.00	.00	.00	.00	.00	.00	.00
FEB. 02...	.00	.00	.00	.00	.00	.00	.00	.00	.00
APR. 06...	.00	.00	.00	.00	.00	.00	.00	.00	.00
MAY 04...	.00	.00	.00	.00	.00	.00	.00	.00	.00
JUNE 01...	.00	.00	.00	.00	.00	.00	.00	.00	.00
JULY 06...	.00	.00	.00	.00	.00	.00	.00	.00	.00
AUG. 03...	.00	.00	.00	.00	.00	.00	.00	.00	.00
SEP. 07...	.00	.00	.00	.00	.00	.00	.00	.00	.00

09429690 COLORADO RIVER ABOVE GILA RIVER, NEAR YUMA, ARIZ.

LOCATION.--Lat 32°43'22", long 114°32'46", in SE¼NE¼ sec.19, T.8 S., R.22 W., Yuma County, on left bank, 0.6 mile upstream from Gila River, 5 miles east of Yuma, 9 miles downstream from Laguna Dam, 12 miles upstream from northerly international boundary, and 14 miles downstream from Imperial Dam.

DRAINAGE AREA.--185,000 sq mi, approximately.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)	BICAR-BONATE (HCO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)
OCT.								
05...	14	110	37	187	204	410	168	1100
12...	13	110	38	196	212	415	178	1120
19...	14	111	37	193	204	410	182	1100
26...	14	114	38	200	218	415	188	1170
NOV.								
02...	12	113	38	188	212	415	172	1080
09...	13	116	38	197	220	420	182	1130
16...	12	109	38	192	212	415	172	1090
23...	14	116	37	203	220	430	180	1150
30...	13	114	40	198	224	425	180	1160
DEC.								
07...	14	114	43	196	222	420	190	1170
14...	13	112	39	209	218	430	190	1160
21...	13	114	38	210	220	430	190	1140
28...	13	118	38	220	230	440	200	1200
JAN.								
04...	12	122	38	211	228	445	190	1190
11...	13	113	38	204	222	420	188	1140
18...	12	110	38	192	216	400	180	1140
25...	11	109	41	203	220	430	180	1140
FEB.								
01...	12	111	40	195	220	410	182	1140
08...	11	107	37	189	210	405	168	1090
16...	11	111	37	186	214	400	172	1100
22...	12	110	35	181	210	400	160	1080
MAR.								
01...	12	114	38	202	218	415	190	1150
08...	10	110	33	179	206	390	160	1090
15...	10	107	35	169	204	390	145	1010
22...	13	108	39	176	208	400	160	1090
29...	11	108	39	182	208	410	162	1140
APR.								
05...	11	110	37	170	208	390	155	1090
12...	10	110	38	176	204	400	162	1060
19...	8.0	106	35	171	198	395	148	1020
26...	10	111	35	186	208	405	165	1120
MAY								
03...	11	110	38	192	204	420	172	1110
10...	9.0	114	39	198	216	425	182	1160
17.	9.0	110	40	193	208	420	178	1130
24...	10	111	38	184	208	410	168	1110
JUNE								
01...	10	111	36	177	208	405	155	1050
07...	11	108	38	175	204	400	158	1060
14...	11	116	40	195	224	425	180	1150
21...	7.0	108	37	170	202	390	155	1060
28...	9.0	105	37	170	200	395	148	1050
JULY								
06...	11	106	38	169	204	395	148	1040
12...	11	106	37	170	200	395	148	1050
19...	11	104	37	169	196	390	150	1030
26...	11	105	37	172	196	400	150	1020
AUG.								
02...	11	105	36	170	196	395	148	1020
09...	13	110	35	182	192	405	168	1080
16...	11	106	37	179	202	400	158	1070
23...	11	90	34	155	168	370	127	946
30...	14	112	38	198	216	415	182	1140
SEP.								
07...	12	108	38	194	204	415	176	1130
13...	11	102	37	172	194	395	148	996
20...	12	109	37	192	208	415	171	1130
27...	12	110	35	198	208	425	169	1120

09429690 COLORADO RIVER ABOVE GILA RIVER, NEAR YUMA, ARIZ.--Continued

PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1971.

REMARKS.--Unpublished chemical analyses (continuing record) for water years 1961-68 available from district office in Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
OCT.							
05...	1030	1.50	425	258	3.9	1610	8.1
12...	1060	1.52	430	256	4.1	1650	8.1
19...	1050	1.50	430	262	4.1	1680	8.1
26...	1080	1.59	440	261	4.1	1700	8.1
NOV.							
02...	1040	1.47	440	266	3.9	1660	8.1
09...	1080	1.54	445	264	4.1	1710	8.1
16...	1040	1.48	430	256	4.0	1640	8.1
23...	1090	1.56	440	260	4.2	1700	8.2
30...	1080	1.58	450	266	4.1	1740	8.1
DEC.							
07...	1090	1.59	460	278	4.0	1740	8.1
14...	1100	1.58	440	261	4.3	1730	8.1
21...	1100	1.55	440	260	4.4	1730	8.1
28...	1140	1.63	450	262	.0	1810	8.1
JAN.							
04...	1130	1.62	460	273	4.3	1770	8.2
11...	1090	1.55	440	258	4.2	1720	8.1
18...	1040	1.55	430	253	4.0	1700	8.1
25...	1080	1.55	440	260	4.2	1710	8.1
FEB.							
01...	1060	1.55	440	260	4.0	1690	8.1
08...	1020	1.48	420	248	4.0	1620	8.2
16...	1020	1.50	430	254	3.9	1660	8.2
22...	1000	1.47	420	248	3.8	1600	8.1
MAR.							
01...	1080	1.56	440	261	4.2	1720	8.2
08...	985	1.48	410	241	3.8	1590	8.2
15...	958	1.37	410	242	3.6	1530	8.2
22...	1000	1.48	430	260	3.7	1600	8.1
29...	1020	1.55	430	260	3.8	1620	8.1
APR.							
05...	977	1.48	425	254	3.6	1590	8.2
12...	998	1.44	430	262	3.7	1590	8.2
19...	962	1.39	410	248	3.7	1520	8.1
26...	1020	1.52	420	250	3.9	1620	8.1
MAY							
03...	1040	1.51	430	262	4.0	1630	8.1
10...	1080	1.58	445	268	4.1	1710	8.1
17...	1050	1.54	440	270	4.0	1670	8.2
24...	1020	1.51	435	264	3.8	1640	8.2
JUNE							
01...	998	1.43	425	254	3.7	1590	8.1
07...	992	1.44	425	258	3.7	1580	8.2
14...	1080	1.56	455	272	4.0	1710	8.2
21...	968	1.44	420	254	3.6	1570	8.2
28...	965	1.43	415	251	3.6	1540	8.1
JULY							
06...	969	1.41	420	252	3.6	1540	8.1
12...	967	1.43	415	251	3.6	1550	8.1
19...	959	1.40	410	250	3.6	1540	8.1
26...	973	1.39	415	254	3.7	1530	8.1
AUG.							
02...	963	1.39	410	250	3.7	1520	8.1
09...	1010	1.47	420	262	3.9	1610	8.1
16...	992	1.46	415	250	3.8	1580	8.1
23...	871	1.29	365	227	3.5	1390	8.1
30...	1070	1.55	435	258	4.1	1700	8.1
SEP.							
07...	1040	1.54	425	258	4.1	1690	8.1
13...	962	1.35	405	246	3.7	1540	8.1
20...	1040	1.54	425	254	4.1	1660	8.0
27...	1050	1.52	420	250	4.2	1660	8.0

09448500 GILA RIVER AT HEAD OF SAFFORD VALLEY, NEAR SOLOMON, ARIZ.

LOCATION.--Lat 32°52'06", long 109°30'38", in SE¼NE¼ sec. 31, T. 6 S., R. 28 E., Graham County, at gaging station 0.6 mile downstream from intake of Brown Canal, 8 miles northeast of Solomon, and 17 miles downstream from San Francisco River.

DRAINAGE AREA.--7,896 sq mi.

PERIOD OF RECORD.--Specific conductance: January 1965 to September 1971.
Water temperatures: January 1965 to September 1971.
Sediment records: February 1965 to September 1971.

EXTREMES.--1970-71:
Specific conductance: Maximum daily, 2,000 micromhos Oct. 25-31, June 13, 14, 24; minimum daily, 325 micromhos Oct. 3.
Water temperatures: Maximum, 33.0°C June 24, July 13, 30; minimum, 2.0°C Jan. 7.
Sediment concentrations: Maximum daily, 37,600 mg/l Aug. 22; minimum daily, 4 mg/l May 22, 29.
Sediment discharge: Maximum daily, 129,000 tons Oct. 3; minimum daily, 0.50 ton May 29.

Period of record:
Specific conductance (1967-71): Maximum daily, 2,020 micromhos July 17, 1970; minimum daily, 260 micromhos Feb. 15, 28, 29, Apr. 4, 1968.
Water temperatures (1967-71): Maximum, 34.5°C July 17, 1970; minimum, 2.0°C Dec. 20, 21, 1967, Jan. 7, 1971.
Sediment concentrations: Maximum daily, 52,000 mg/l July 28, 1967; minimum daily, 4 mg/l May 22, 29, 1971.
Sediment discharge: Maximum daily, 1,900,000 tons Dec. 23, 1965; minimum daily, 0.50 ton May 29, 1971.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	400	1100	975	900	1000	1100	1500	1400	1400	1700	625	525
2	425	1100	975	950	1100	1100	1400	1400	1600	1900	550	400
3	325	1100	975	950	1000	1100	1400	1450	1400	1600	900	525
4	350	1100	950	975	1000	1100	1400	1450	1500	1100	1020	580
5	400	1100	950	900	950	1100	1400	1450	1500	1400	950	585
6	475	1100	950	975	1000	1100	1400	1500	1500	1400	950	640
7	550	1100	950	1000	1000	1100	1300	1450	1500	1700	950	705
8	775	1100	950	1250	1000	1190	1600	1590	1700	1650	1150	750
9	750	1100	950	1050	990	1190	1400	1450	1600	1600	850	990
10	900	1050	950	900	1000	1250	1400	1450	1600	1600	1100	550
11	900	1000	1000	900	1000	1250	1400	1400	1400	1600	892	580
12	900	1000	990	875	1050	1250	1400	1450	1400	1800	640	700
13	1000	1000	925	875	1050	1250	1400	1450	2000	1800	675	790
14	1000	1000	925	875	1100	1250	1400	1400	2000	1900	700	1100
15	1000	910	925	875	1100	1250	1400	1400	1600	1800	445	1100
16	1050	910	925	900	1100	1400	1390	1600	1600	1700	500	1100
17	1050	910	970	900	1100	1250	1400	1490	1590	1800	510	1150
18	1010	910	950	900	1100	1250	1400	1400	1650	1700	540	490
19	1000	900	950	900	1100	1250	1390	1400	1600	1600	540	440
20	1000	900	950	925	1100	1250	1200	1250	1600	1500	525	490
21	1000	900	950	900	1150	1250	1200	1250	1600	1500	550	570
22	1010	990	950	950	1100	1250	1200	1400	1600	1400	452	850
23	1010	990	900	990	975	1300	1200	1400	1600	1500	445	850
24	1010	995	900	990	990	1300	1400	1400	2000	1400	535	400
25	2000	900	950	990	1030	1350	1400	1400	1900	1500	440	700
26	2000	900	950	940	1100	1350	1400	1700	1600	1500	510	910
27	2000	900	950	990	1100	1350	1400	1500	1700	1550	650	910
28	2000	900	950	990	1100	1350	1400	1500	1750	1300	548	1000
29	2000	950	900	1050	---	1390	1400	1400	1600	1300	500	---
30	2000	950	900	1000	---	1390	1410	1400	1600	1300	460	520
31	2000	---	900	1000	---	1390	---	1400	---	675	575	---
AVG	1070	981	945	939	1050	1250	1380	1470	1620	1543	671	722

09448500 GILA RIVER AT HEAD OF SAFFORD VALLEY, NEAR SOLOMON, ARIZ.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.5	16.0	13.5	7.0	14.0	11.5	22.5	21.0	26.0	31.0	29.0	28.0
2	19.0	16.0	13.0	9.0	14.0	11.0	24.0	20.0	22.0	32.5	22.0	25.5
3	16.0	15.5	12.5	6.5	9.0	13.5	22.0	21.5	24.5	31.0	28.0	27.5
4	16.0	15.0	10.0	6.5	9.5	12.0	22.0	21.0	24.5	31.0	23.0	23.0
5	13.0	16.0	12.0	3.5	11.0	15.0	21.5	21.5	24.0	30.5	27.0	22.0
6	21.0	15.0	12.5	3.0	11.5	15.0	21.5	20.0	25.0	23.5	25.0	28.0
7	19.0	12.5	13.0	2.0	12.0	15.5	20.5	21.0	26.5	30.0	26.5	29.5
8	17.5	15.5	13.0	4.0	11.0	15.0	23.5	25.5	28.5	31.0	24.0	25.0
9	18.5	14.5	11.0	6.0	12.5	17.5	23.5	22.0	26.5	32.0	25.0	25.5
10	18.0	14.0	11.0	8.5	12.0	18.0	17.0	24.5	26.0	32.0	21.5	28.5
11	19.0	14.5	10.5	8.5	14.0	15.0	23.0	24.0	27.0	31.5	22.0	22.5
12	15.0	13.5	10.0	9.0	15.0	12.5	23.0	23.0	27.5	32.0	24.0	29.0
13	14.0	13.5	10.0	9.0	15.0	17.0	25.0	25.0	29.0	33.0	24.5	23.0
14	14.0	14.0	5.0	10.5	16.0	15.0	23.0	26.5	31.0	28.0	25.0	27.0
15	15.5	14.0	9.0	10.0	15.5	---	22.0	28.0	30.5	29.0	21.5	26.5
16	15.0	14.0	9.5	11.0	17.0	14.5	23.0	28.0	31.0	28.5	22.5	25.0
17	20.0	12.0	10.0	11.0	15.0	15.5	22.0	22.0	30.5	22.0	13.0	25.0
18	20.0	17.5	10.0	13.0	13.0	18.0	15.0	21.0	31.0	22.5	25.0	23.5
19	18.5	12.0	9.5	14.0	11.5	18.0	15.0	24.0	31.0	28.5	24.0	18.0
20	17.0	13.0	10.0	14.0	10.0	18.0	20.0	22.0	31.0	32.0	24.0	18.0
21	19.0	13.0	10.0	14.0	12.0	17.5	13.0	21.5	24.0	29.0	24.0	23.5
22	19.0	13.0	7.0	14.0	12.0	15.0	20.0	21.0	30.5	29.0	24.5	18.5
23	19.0	12.0	8.0	13.0	14.0	21.0	22.5	22.5	31.0	31.5	27.0	19.0
24	19.0	11.5	7.0	14.0	15.5	21.0	25.0	25.0	33.0	28.0	27.0	13.0
25	16.0	11.5	5.5	9.0	11.5	20.0	20.0	26.0	30.0	24.0	22.0	22.5
26	15.0	13.0	10.0	13.0	15.0	23.5	20.0	25.0	29.0	22.5	28.0	23.0
27	16.0	15.0	12.5	11.0	11.5	23.0	17.0	23.0	25.0	30.0	28.0	24.0
28	13.0	13.5	10.5	12.5	12.0	22.0	19.0	23.0	29.5	25.0	25.5	25.0
29	15.0	14.5	10.0	13.5	---	21.0	18.0	22.0	26.5	32.0	23.0	---
30	16.0	14.0	10.5	13.0	---	24.5	20.5	18.0	30.0	33.0	28.0	21.0
31	17.0	---	10.0	14.0	---	20.0	---	27.5	---	28.0	29.0	---
AVG	17.5	14.0	10.0	10.0	13.0	18.0	21.0	23.0	28.0	29.0	25.0	24.0

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	70	69	13	109	43	13	115	55	17
2	125	2690	15400	100	20	5.4	115	48	15
3	1510	25600	129000	93	30	7.5	117	59	19
4	1110	17500	60800	100	29	7.8	122	63	21
5	671	10800	19800	109	30	8.8	124	66	22
6	277	7200	5670	112	32	9.7	117	58	18
7	175	2560	1210	115	18	5.6	117	60	19
8	144	990	385	110	18	5.3	115	50	16
9	119	1110	357	99	13	3.5	112	36	11
10	104	2120	595	102	15	4.1	120	43	14
11	95	810	208	105	16	4.5	112	32	9.7
12	96	150	39	89	11	2.6	117	33	10
13	88	127	30	91	15	3.7	126	34	12
14	85	89	20	93	11	2.8	132	42	15
15	85	70	16	98	27	7.1	134	81	29
16	80	70	15	104	28	7.9	134	64	23
17	90	60	15	107	28	8.1	132	58	21
18	92	53	13	107	18	5.2	132	60	21
19	90	33	8.0	110	21	6.2	132	66	24
20	90	33	8.0	105	56	16	132	85	30
21	88	42	10	112	49	15	132	103	37
22	83	37	8.3	122	121	40	130	78	27
23	89	31	7.4	124	137	46	130	110	39
24	91	39	9.6	122	155	51	130	104	37
25	91	420	103	117	95	30	130	80	28
26	91	650	160	122	124	41	130	54	19
27	90	200	49	127	124	43	140	56	21
28	92	27	6.7	127	130	45	150	86	35
29	95	27	6.9	139	124	47	154	100	42
30	95	34	8.7	128	50	17	154	101	42
31	97	21	5.5	--	--	--	149	97	39
TOTAL	6398	--	233977.1	3298	--	509.8	3986	--	732.7

09448500 GILA RIVER AT HEAD OF SAFFORD VALLEY, NEAR SOLOMON, ARIZ.--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	146	131	52	120	19	6.2	105	23	6.5
2	149	115	46	115	20	6.2	108	28	8.2
3	155	184	77	115	34	11	105	23	6.5
4	152	160	66	115	26	8.1	101	20	5.5
5	146	140	55	115	28	8.7	96	21	5.4
6	143	192	74	118	18	5.7	91	34	8.4
7	135	206	75	118	15	4.8	96	33	8.6
8	135	171	62	115	16	5.0	96	20	5.2
9	130	140	49	122	17	5.6	56	15	3.9
10	125	102	34	120	29	9.4	93	13	3.3
11	128	97	34	113	21	6.4	89	13	3.1
12	138	142	53	110	16	4.8	85	12	2.8
13	140	158	60	103	14	3.9	85	16	3.7
14	138	144	54	105	15	4.3	85	12	2.8
15	128	111	38	105	12	3.4	74	10	2.0
16	125	82	28	105	16	4.5	72	16	3.1
17	128	88	30	101	17	4.6	74	10	2.0
18	132	98	35	101	20	5.5	74	10	2.0
19	130	59	21	103	14	3.9	73	11	2.2
20	125	84	28	108	14	4.1	73	8	1.6
21	128	84	29	105	13	3.7	75	11	2.2
22	125	54	18	108	17	5.0	73	8	1.6
23	125	47	16	115	22	6.8	69	10	1.9
24	122	37	12	113	21	6.4	71	13	2.5
25	120	38	12	105	28	7.9	71	11	2.1
26	115	62	19	101	11	3.0	75	14	2.8
27	115	85	26	101	12	3.3	75	17	3.4
28	115	37	12	101	16	4.4	73	16	3.2
29	118	28	8.9	--	--	--	72	16	3.1
30	128	41	14	--	--	--	66	16	2.9
31	125	27	9.1	--	--	--	60	15	2.4
TOTAL	4064	--	1147.0	3076	--	156.6	2551	--	114.9

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	65	14	2.5	51	18	2.5	41	25	2.8
2	67	14	2.5	48	15	1.9	43	30	3.5
3	67	16	2.9	49	34	4.5	44	25	3.0
4	70	17	3.2	52	18	2.5	41	24	2.7
5	66	19	3.4	52	19	2.7	41	24	2.7
6	70	20	3.8	52	13	1.8	36	20	1.9
7	69	9	1.7	53	14	2.0	35	38	3.6
8	68	10	1.8	55	19	2.8	36	22	2.1
9	67	6	1.1	55	18	2.7	34	16	1.5
10	64	6	1.0	55	26	3.9	35	26	2.5
11	63	10	1.7	56	21	3.2	34	19	1.7
12	62	17	2.8	56	12	1.8	28	16	1.2
13	54	10	1.5	56	13	2.0	31	24	2.0
14	56	17	2.6	53	13	1.9	35	22	2.1
15	60	9	1.5	52	14	2.0	34	24	2.2
16	62	8	1.3	52	17	2.4	34	24	2.2
17	64	11	1.9	52	16	2.2	33	20	1.8
18	60	6	.97	51	12	1.7	32	21	1.8
19	65	9	1.6	51	6	.83	32	22	1.9
20	73	18	3.5	51	12	1.7	32	12	1.0
21	73	12	2.4	50	9	1.2	29	11	.86
22	70	16	3.0	49	4	.53	28	24	1.8
23	64	10	1.7	50	12	1.6	28	25	1.9
24	62	14	2.3	49	11	1.5	31	33	2.8
25	64	21	3.6	48	18	2.3	31	19	1.6
26	60	11	1.8	48	10	1.3	29	22	1.7
27	60	22	3.6	46	10	1.2	30	13	1.1
28	57	22	3.4	46	8	.99	31	25	2.1
29	57	15	2.3	46	4	.50	31	15	1.3
30	55	15	2.2	46	8	.99	32	21	1.8
31	--	--	--	46	19	2.4	--	--	--
TOTAL	1914	--	69.57	1576	--	61.54	1011	--	61.16

09448500 GILA RIVER AT HEAD OF SAFFORD VALLEY, NEAR SOLOMON, ARIZ.--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	32	15	1.3	316	30600	26100	316	10200	9020
2	37	28	2.8	252	21400	14600	672	23200	42200
3	80	220	77	133	7300	2620	386	10500	10900
4	92	1450	362	111	4500	1350	326	3700	3260
5	78	19900	4190	189	5990	3940	222	3200	1920
6	53	22200	3180	153	8900	3680	198	1790	957
7	47	6120	776	106	7300	2090	168	950	431
8	44	839	100	159	7100	3050	142	600	230
9	39	715	75	102	7800	2150	277	2560	2580
10	37	645	64	88	3000	713	279	7440	5660
11	37	520	52	507	30200	54800	196	10500	5530
12	29	425	33	287	14600	11300	139	5850	2200
13	28	380	29	145	8900	3480	112	1950	590
14	27	365	27	388	24500	28900	105	700	198
15	29	305	24	695	28800	55500	99	550	147
16	32	315	27	396	18400	19900	84	400	91
17	35	360	34	324	7550	6610	298	4500	10600
18	36	250	24	316	5700	4860	830	26800	71300
19	36	220	21	374	9710	10700	1330	23100	88000
20	35	195	18	358	13500	14100	451	12500	15800
21	48	290	38	798	16800	55500	182	4900	2410
22	43	245	28	951	37600	98200	122	1200	395
23	47	211	57	511	27800	39200	121	3090	1500
24	87	1280	314	273	11900	8740	672	22100	50600
25	55	680	101	304	9870	8850	188	6200	3150
26	47	580	74	262	8000	5660	121	900	294
27	41	300	33	217	6700	3930	87	656	154
28	53	245	35	422	11900	14200	67	241	44
29	62	450	75	873	32900	82400	97	444	891
30	63	465	79	422	18100	20600	459	15300	21400
31	378	23500	34400	249	11000	7400	--	--	--
TOTAL	1787	--	44351.1	10681	--	615123	8746	--	352452

TOTAL DISCHARGE FOR YEAR (CFS-DAYS)	49088
TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS)	1248756.47

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971
(ANALYSES MAKE IN DISTILLED WATER)

DATE	TIME	TEM-PERATURE (DEG C)	DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)	SUS. SED. FALL DIAM. PERCENT FINER THAN .002 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .004 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .016 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .062 MM
AUG. 01...	1620	28.8	316	32600	27800	61	75	99	100

09460200 FRYE CREEK AT THATCHER, ARIZ.

LOCATION.--Lat 32°50'00", long 109°45'39", in SW¼ sec. 11, T. 7 S., R. 25 E., Graham County, at gaging station 1,300 ft downstream from Frye Creek detention dam, and 1 mile south of Thatcher.

DRAINAGE AREA.--24.3 sq mi.

PERIOD OF RECORD.--Sediment records: March 1963 to September 1971.

REMARKS.--This station is operated in conjunction with a trap efficiency study of the Frye Creek detention reservoir. Results are published by flow event, as opposed to the normal procedure of reporting daily values.

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971 (WHERE NO MEAN CONCENTRATIONS ARE SHOWN, LOADS ARE COMPUTED FROM DISCHARGE-SEDIMENT LOAD CURVES)

DATE	FLOW EVENT NO.	OUTFLOW DURATION[1] (HOURS)	TOTAL OUTFLOW[2] (ACRE-FEET)	MEAN DISCHARGE FOR PERIOD (CFS)	MEAN CONCENTRATION (MG/L)	OUTFLOW SEDIMENT LOAD (TONS)
OCT. 2, 1970	78	23.5	25	13	4,120	409
JULY 23-24, 1971 ...	79	9.5	3.4	4.2	6,050	120
AUG. 18-20.........	80	47.25	53	13	7,590	1,250
AUG. 21-24.........	81	55.5	41	8.9	3,800	557
AUG. 27-28.........	82	14.0	6.3	5.5	6,360	287
SEPT. 8-9	83	8.5	29	42	3,830	632
SEPT. 17-18........	84	11.5	3.0	3.0	--	110
SEPT. 29	85	5.0	1.0	2.3	2,000	19

[1] Duration of event is based on time when flow is more than 0.2 cfs.
[2] Excluding outflow less than 0.2 cfs.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971 (ANALYSES MADE IN DISTILLED WATER EXCEPT AS NOTED; N, IN NATIVE WATER)

DATE	TIME	TEMPERATURE (DEG C)	DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. PERCENT FINER THAN .002 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .004 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .008 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .016 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .031 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .062 MM	SUS. SED. SIEVE DIAM. PERCENT FINER THAN .062 MM
OCT.												
02...	1330	15.0	66	23400	4170	39	50	64	82	95	--	99
JULY												
23...	2125	23.5	16	30500	1320	35	56	73	90	98	--	100
AUG.												
18...	2300	22.5	148	32200	12900	36	52	65	79	94	100	--
21...	2130	22.0	149	10300	4140	28	45	65	85	95	98	--
27...	2240	21.0	23	29500	1830	33	44	54	71	91	100	--
SEP.												
08...	2130	22.0	22	11800	701	37	48	61	73	88	--	97

DATE	SUS. SED. FALL DIAM. PERCENT FINER THAN .125 MM	SUS. SED. SIEVE DIAM. PERCENT FINER THAN .125 MM	SUS. SED. SIEVE DIAM. PERCENT FINER THAN .250 MM	SUS. SED. SIEVE DIAM. PERCENT FINER THAN .500 MM	SUS. SED. SIEVE DIAM. PERCENT FINER THAN 1.00 MM	SUS. SED. SIEVE DIAM. PERCENT FINER THAN 2.00 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .002 MM (N)	SUS. SED. FALL DIAM. PERCENT FINER THAN .004 MM (N)	SUS. SED. FALL DIAM. PERCENT FINER THAN .008 MM (N)	SUS. SED. FALL DIAM. PERCENT FINER THAN .016 MM (N)	SUS. SED. FALL DIAM. PERCENT FINER THAN .031 MM (N)
OCT.											
02...	--	100	--	--	--	--	1	6	21	76	94
JULY											
23...	--	--	--	--	--	--	1	4	16	88	97
AUG.											
18...	--	--	--	--	--	--	1	4	16	74	93
21...	100	--	--	--	--	--	4	10	35	82	97
27...	--	--	--	--	--	--	3	9	22	62	91
SEP											
08...	--	98	98	99	99	99	3	10	28	64	87

09471000 SAN PEDRO RIVER AT CHARLESTON, ARIZ.

LOCATION.--Lat 31°37'33", long 110°10'26", in NE¼NE¼ sec. 11, T. 21 S., R. 21 E., Cochise County, at gaging station in Spanish land grant of San Juan de las Boquillas y Nogales, at county highway bridge, 0.3 mile south of Charleston, 1.5 miles upstream from Charleston damsite, 9 miles upstream from Babocomari River, and 29 miles upstream from Benson.

DRAINAGE AREA.--1,219 sq mi, of which 696 sq mi is in Mexico.

PERIOD OF RECORD.--Specific conductance: October 1964 to September 1971.
Water temperatures: July 1963 to September 1971.
Sediment records: July 1963 to September 1971.

EXTREMES.--1970-71:
Specific conductance: Maximum daily, 480 micromhos Apr. 14; minimum daily, 210 micromhos Aug. 11, 15, 25.
Water temperatures: Maximum, 32.5°C Aug. 5; minimum, freezing point on Jan. 5, 6, 9.
Sediment concentrations: Maximum daily, 23,800 mg/l July 25; minimum daily, 2 mg/l May 27, 28, June 22.
Sediment discharge: Maximum daily, 118,000 tons Aug. 11; minimum daily, 0.01 ton July 10.

Period of record:
Specific conductance: Maximum daily, 1,550 micromhos Dec. 22, 1967; minimum daily, 140 micromhos Mar. 18, 1969.
Water temperatures: Maximum, 36.0°C July 12, 1968; minimum, freezing point on several days during 1964-68, 1970, 1971.
Sediment concentrations: Maximum daily, 30,600 mg/l July 29, 1966; minimum daily, 1 mg/l May 27, 28, 31, June 1, 2, 1966, Oct. 23, 24, Nov. 2, 12, 1969.
Sediment discharge: Maximum daily, 410,000 tons Aug. 14, 1964, minimum daily, 0.01 ton July 3, 6, 7, 1969, July 10, 1971.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	330	380	390	---	380	360	440	420	360	375	250	460
2	320	400	390	360	390	420	390	360	355	350	325	360
3	340	410	390	360	400	370	360	450	400	340	360	340
4	345	390	390	360	400	430	360	430	350	340	250	340
5	350	400	390	375	400	450	360	420	350	340	360	400
6	330	410	390	375	400	480	390	450	350	340	---	410
7	340	400	390	375	390	380	430	360	350	340	450	390
8	375	425	450	375	390	450	440	400	325	340	400	360
9	370	425	440	375	390	360	370	---	345	375	400	330
10	370	390	440	375	390	370	370	410	395	360	275	390
11	370	400	440	375	390	440	370	450	375	350	210	430
12	370	---	400	375	370	420	370	360	340	350	270	430
13	370	420	400	375	400	440	390	450	340	340	240	425
14	350	420	400	375	400	380	480	470	345	340	240	430
15	350	410	400	375	400	400	410	370	360	340	210	400
16	360	410	440	375	410	400	---	440	340	350	240	450
17	360	400	370	375	425	420	---	360	350	440	300	390
18	370	400	390	375	425	420	---	380	---	350	450	325
19	370	400	420	375	425	450	---	370	---	360	225	305
20	360	400	420	375	425	450	---	350	345	460	235	285
21	360	400	420	375	425	380	---	350	345	350	230	370
22	360	440	420	375	425	400	---	360	395	---	240	400
23	360	420	420	375	450	440	---	370	410	290	270	425
24	360	370	330	375	340	420	---	350	395	240	310	410
25	360	370	350	375	370	400	---	360	400	360	210	440
26	370	370	350	400	370	390	390	380	425	310	300	440
27	375	370	350	380	410	440	378	375	410	325	360	450
28	430	370	330	400	450	400	350	360	360	350	325	350
29	380	370	360	390	---	400	410	340	340	340	360	350
30	380	320	360	390	---	340	400	360	340	325	240	410
31	380	---	360	400	---	360	---	345	---	270	325	---
AVG	360	399	395	377	402	406	---	387	364	345	295	390

09471000 SAN PEDRO RIVER AT CHARLESTON, ARIZ.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25.5	7.5	6.0	---	7.0	4.5	20.5	9.5	16.0	29.0	22.0	23.0
2	21.0	16.0	5.0	7.0	4.5	6.0	21.0	13.5	12.0	20.0	23.0	25.0
3	13.0	14.5	6.0	9.0	15.0	5.5	6.0	10.5	25.0	24.0	20.5	22.0
4	19.0	16.0	6.5	1.5	11.5	6.0	8.5	16.0	10.0	10.0	20.5	22.0
5	12.0	7.0	8.0	0.0	15.5	9.5	7.0	9.5	15.0	23.0	32.5	29.5
6	15.0	7.5	4.0	0.0	2.0	3.0	15.5	19.0	11.0	20.0	---	20.0
7	10.5	10.0	3.0	9.0	4.5	5.0	9.0	10.0	18.0	25.0	17.0	22.0
8	10.0	8.0	4.5	8.5	1.0	4.0	11.0	17.0	12.0	26.0	25.5	21.0
9	9.0	4.5	6.0	0.0	3.0	2.0	7.0	---	31.0	24.0	18.5	25.0
10	10.0	5.5	15.0	2.0	2.0	5.0	12.5	14.5	20.5	21.0	20.5	20.5
11	9.0	6.5	12.0	1.0	7.5	10.0	9.0	11.5	22.0	24.0	18.5	21.0
12	14.5	12.0	1.5	4.0	3.0	6.0	14.0	15.5	14.0	21.0	26.0	18.0
13	9.0	10.0	4.0	2.0	5.5	14.0	21.5	15.0	18.0	27.0	18.5	20.5
14	13.5	6.0	4.5	1.0	4.0	6.0	15.0	23.0	14.0	21.5	22.0	26.0
15	12.0	6.0	5.0	1.5	6.0	10.5	16.0	13.0	20.0	24.0	18.0	26.0
16	16.0	7.0	12.5	3.0	15.0	13.5	---	16.0	16.0	25.0	22.5	28.0
17	11.0	6.0	5.0	3.0	14.5	16.0	---	12.5	22.5	25.5	22.0	36.0
18	13.5	4.0	7.0	6.0	8.0	18.5	---	19.0	---	20.5	22.5	17.0
19	12.0	7.0	6.0	4.5	14.0	17.0	---	9.0	---	24.0	21.0	19.0
20	12.5	4.0	4.0	7.0	6.0	7.0	---	14.5	19.0	23.5	22.0	15.5
21	10.0	6.0	6.0	10.0	2.0	7.0	---	11.5	22.0	24.0	23.0	16.0
22	12.0	4.0	4.5	11.5	2.5	18.0	---	16.0	21.0	---	22.0	16.0
23	9.0	7.0	6.5	8.0	7.0	16.0	---	9.0	23.5	22.5	21.5	15.0
24	14.0	4.0	9.0	4.0	7.5	7.0	---	15.5	22.0	19.0	24.0	14.0
25	14.0	6.5	7.5	2.5	6.0	12.5	---	11.0	20.5	26.0	21.5	16.5
26	11.0	7.0	6.5	7.0	5.0	7.0	10.0	23.0	19.5	27.5	22.0	14.0
27	5.5	11.0	10.5	9.0	5.0	12.0	9.0	22.0	22.5	24.0	21.5	23.5
28	10.0	9.0	10.0	5.0	5.0	9.0	17.0	19.0	18.0	21.0	22.5	14.0
29	6.0	7.0	8.0	4.0	---	14.0	19.0	11.0	21.0	24.0	21.0	20.5
30	6.0	9.5	4.0	4.5	---	11.0	22.5	15.0	15.5	22.0	21.0	18.0
31	7.0	---	4.0	4.5	---	13.5	---	11.5	---	23.5	21.0	---
AVG	12.0	9.0	6.5	4.5	7.0	9.5	---	14.5	18.5	23.0	22.0	21.0

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	9.6	42	1.1	11	16	.48	13	14	.49
2	12	63	2.0	11	15	.45	14	21	.79
3	13	95	3.3	12	17	.55	14	18	.68
4	12	44	1.4	12	25	.81	14	31	1.2
5	12	43	1.4	12	22	.71	14	13	.49
6	11	26	.77	12	19	.62	14	19	.72
7	9.2	18	.45	13	24	.84	14	19	.72
8	9.2	68	1.7	14	22	.83	14	11	.42
9	9.6	16	.41	14	59	2.2	14	10	.38
10	10	15	.41	14	27	1.0	14	7	.26
11	10	12	.32	14	40	1.5	15	5	.20
12	10	57	1.5	14	35	1.3	15	19	.77
13	10	16	.43	14	32	1.2	15	21	.85
14	9.6	35	.91	14	32	1.2	15	15	.61
15	9.6	40	1.0	13	26	.91	15	13	.53
16	10	12	.32	14	34	1.3	16	18	.78
17	10	16	.43	14	17	.64	17	19	.87
18	11	23	.68	13	14	.49	17	19	.87
19	11	14	.42	13	12	.42	18	25	1.2
20	11	18	.53	13	18	.63	17	20	.92
21	9.6	44	1.1	12	13	.42	17	18	.83
22	9.6	10	.26	12	16	.52	17	17	.78
23	9.6	29	.75	11	24	.71	17	15	.69
24	9.2	30	.75	12	28	.91	17	89	4.1
25	9.2	21	.52	12	20	.65	18	101	4.9
26	9.2	16	.40	12	27	.87	19	80	4.1
27	9.2	23	.57	12	43	1.4	19	95	4.9
28	9.6	22	.57	12	10	.32	20	102	5.5
29	10	24	.65	12	36	1.2	19	94	4.8
30	11	25	.74	13	21	.74	19	93	4.8
31	11	25	.74	--	--	--	19	109	5.6
TOTAL	317.0	--	26.53	381	--	25.82	500	--	54.75

09471000 SAN PEDRO RIVER AT CHARLESTON, ARIZ.--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	19	100	5.1	12	29	.94	14	28	1.1
2	17	98	4.5	12	22	.71	14	26	.98
3	15	129	5.2	12	18	.58	14	33	1.2
4	15	106	4.3	12	34	1.1	15	14	.57
5	15	83	3.4	12	19	.62	15	26	1.1
6	15	77	3.1	12	20	.65	15	21	.85
7	14	73	2.8	13	14	.49	15	31	1.3
8	13	30	1.1	13	20	.70	15	21	.85
9	13	22	.77	13	26	.91	15	34	1.4
10	14	27	1.0	13	57	2.0	15	28	1.1
11	14	26	.98	14	43	1.6	14	22	.83
12	13	28	.98	14	19	.72	15	8	.32
13	14	24	.91	14	22	.83	14	29	1.1
14	13	25	.88	14	23	.87	14	13	.49
15	13	24	.84	14	25	.95	14	22	.83
16	13	24	.84	14	18	.68	14	15	.57
17	12	25	.81	14	34	1.3	15	16	.65
18	12	30	.97	14	21	.79	14	23	.87
19	13	24	.84	14	19	.72	15	13	.53
20	12	32	1.0	14	20	.76	14	10	.38
21	12	17	.55	14	23	.87	14	19	.72
22	12	22	.71	14	18	.68	13	48	1.7
23	12	19	.62	14	26	.98	13	66	2.3
24	12	18	.58	15	26	1.1	13	18	.63
25	12	17	.55	15	25	1.0	12	16	.52
26	12	16	.52	15	16	.65	12	16	.52
27	12	30	.97	15	30	1.2	12	75	2.4
28	12	27	.87	15	10	.41	13	16	.56
29	12	26	.84	--	--	--	12	19	.62
30	12	33	1.1	--	--	--	13	32	1.1
31	12	25	.81	--	--	--	12	22	.71
TOTAL	411	--	48.44	381	--	24.81	429	--	28.80

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	12	72	2.3	9.6	8	.21	6.2	7	.12
2	13	30	1.1	8.8	14	.33	6.2	5	.08
3	13	12	.42	8.6	9	.21	6.5	15	.26
4	12	21	.68	8.8	7	.17	6.2	6	.10
5	13	23	.81	9.2	5	.12	5.9	16	.25
6	13	15	.53	9.2	6	.15	5.3	5	.07
7	14	5	.19	8.8	5	.12	5.3	8	.11
8	13	5	.18	8.8	8	.19	4.8	8	.10
9	12	14	.45	9.2	7	.17	4.8	9	.12
10	11	14	.42	9.2	6	.15	5.3	7	.10
11	9.6	19	.49	8.8	6	.14	5.6	5	.08
12	10	26	.70	8.8	7	.17	4.8	6	.08
13	9.6	7	.18	8.8	6	.14	5.3	18	.26
14	9.6	4	.10	8.8	8	.19	4.8	5	.06
15	11	9	.27	8.4	5	.11	4.8	8	.10
16	11	9	.27	8.8	6	.14	4.1	7	.08
17	11	9	.27	9.6	4	.10	3.9	10	.11
18	11	9	.27	9.6	6	.16	3.7	11	.11
19	12	10	.32	9.6	7	.18	3.6	12	.12
20	12	10	.32	8.8	3	.07	3.2	13	.11
21	11	9	.27	8.4	4	.09	2.9	14	.11
22	11	9	.27	7.6	3	.06	2.9	2	.02
23	10	8	.22	7.6	5	.10	3.1	6	.05
24	10	8	.22	7.2	8	.16	3.6	22	.21
25	9.6	7	.18	6.8	7	.13	7.6	44	.90
26	9.1	6	.15	6.5	7	.12	3.9	36	.38
27	8.8	14	.33	6.8	2	.04	3.4	12	.11
28	9.2	17	.42	6.5	2	.04	2.9	27	.21
29	9.2	6	.15	6.5	5	.09	2.9	34	.27
30	9.6	7	.18	6.5	7	.12	2.8	22	.17
31	--	--	--	6.8	4	.07	--	--	--
TOTAL	330.3	--	12.66	257.4	--	4.24	136.3	--	4.85

09471000 SAN PEDRO RIVER AT CHARLESTON, ARIZ.--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	2.9	19	.15	176	5100	7420	76	3400	698
2	2.8	22	.17	73	1200	237	879	10000	38600
3	3.9	19	.20	48	524	68	218	7530	5490
4	3.4	13	.12	270	9160	10200	53	1000	143
5	3.2	17	.15	61	2100	346	43	1300	151
6	3.2	10	.09	50	2100	284	33	479	43
7	3.2	16	.14	27	736	54	27	197	14
8	2.9	10	.08	21	500	28	68	3780	1450
9	2.9	12	.09	22	1700	101	61	4600	758
10	1.8	3	.01	1290	12900	91200	36	1500	146
11	1.5	5	.02	2200	16900	118000	27	200	15
12	2.9	3	.02	773	7840	28200	21	110	6.2
13	2.6	6	.04	1470	16000	62600	15	87	3.5
14	1.6	4	.02	535	6780	10600	12	32	1.0
15	1.9	8	.04	1500	13400	69600	10	11	.30
16	3.7	1860	33	212	3500	2000	8.0	18	.39
17	53	18400	3650	142	3700	1420	8.0	4	.09
18	53	5650	1430	399	7580	12000	36	384	61
19	40	4990	834	1050	15700	49500	267	13700	14100
20	12	1900	62	2100	18200	108000	113	4100	1250
21	8.8	400	9.5	986	11200	31100	61	848	140
22	413	14900	24800	309	4200	3500	39	190	20
23	239	11100	13200	166	2800	1250	32	112	9.7
24	1040	21200	72300	256	3840	4920	24	71	4.6
25	749	23800	56600	255	6600	4540	20	80	4.3
26	85	3900	895	97	1700	445	15	29	1.2
27	60	1140	236	75	1300	263	15	20	.81
28	58	1200	188	103	2460	814	15	29	1.2
29	975	17400	71500	61	1200	198	122	381	408
30	134	7140	2820	147	7030	3190	49	940	124
31	1210	18900	78500	109	3300	971	--	--	--
TOTAL	5174.1	--	327118.84	14983	--	618049	2403.0	--	63644.29

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 25703.1

TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS) 1009043.03

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971
(ANALYSES MADE IN DISTILLED WATER)

DATE	TIME	TEM-PERATURE (DEG C)	DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)	SUS. SED. FALL DIAM. PERCENT FINER THAN .002 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .004 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .016 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .062 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .125 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .250 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .500 MM
JULY												
23...	2300	21.5	1630	28400	125000	41	51	66	88	96	99	100
29...	0850	21.0	3340	32600	294000	36	50	71	88	95	99	100
AUG.												
10...	1900	22.0	4250	41300	474000	24	29	48	76	93	100	--

09471800 SAN PEDRO RIVER NEAR BENSON, ARIZ.

LOCATION.--Lat 32°07'35'', long 110°17'22'', in SW¼ sec. 15, T. 15 S., R. 20 E., Cochise County, at gaging station 6 miles downstream from Tres Alamos Wash, and 11 miles north of Benson.

DRAINAGE AREA.--2,500 sq mi, of which 696 sq mi is in Mexico.

PERIOD OF RECORD.--Sediment records: March 1966 to September 1971.

EXTREMES.--1970-71:
Sediment concentrations: Maximum daily, 78,200 mg/l Aug. 20; minimum daily, no flow on many days.
Sediment discharge: Maximum daily, 602,000 tons Aug. 20; minimum daily, 0 tons on many days.

Period of record:
Sediment concentrations (1966-71): Maximum daily, 78,600 mg/l July 28, 1969; minimum daily, no flow on many days each year.
Sediment discharge (1966-71): Maximum daily, 602,000 tons Aug. 20, 1971; minimum daily, 0 tons on many days each year.

REMARKS.--Records of temperature and specific conductance of individual samples available in district office at Tucson, Ariz.

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	22	729	522	0	0	0	0	0	0
2	28	4210	381	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0
31	0	0	0	--	--	--	0	0	0
TOTAL	50	--	903	0	--	0	0	--	0

09471800 SAN PEDRO RIVER NEAR BENSON, ARIZ.--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0
29	0	0	0	--	--	--	0	0	0
30	0	0	0	--	--	--	0	0	0
31	0	0	0	--	--	--	0	0	0
TOTAL	0	--	0	0	--	0	0	--	0

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0
31	--	--	--	0	0	0	--	--	--
TOTAL	0	--	0	0	--	0	0	--	0

09471800 SAN PEDRO RIVER NEAR BENSON, ARIZ.--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	0	0	0	192	28100	15300	44	12000	1430
2	0	0	0	59	19400	3090	66	13100	3330
3	0	0	0	715	23300	159000	585	48200	101000
4	0	0	0	373	34300	60900	96	19300	5500
5	0	0	0	63	18800	3770	42	6000	680
6	0	0	0	4.1	5480	110	16	3000	130
7	0	0	0	0	0	0	5.0	1000	14
8	0	0	0	0	0	0	85	14800	11800
9	0	0	0	0	0	0	64	20400	3530
10	0	0	0	3.6	2660	244	31	10000	837
11	0	0	0	3080	36900	305000	20	7000	378
12	0	0	0	732	20100	55300	12	5000	162
13	0	0	0	1790	26300	165000	5.3	2500	36
14	0	0	0	993	40200	116000	.60	1000	1.6
15	0	0	0	1670	56600	295000	0	0	0
16	0	0	0	320	36700	31700	0	0	0
17	54	41000	7630	142	14000	5370	274	11400	48500
18	25	47400	3420	92	11500	2860	163	39800	24900
19	96	56100	18700	1300	41500	171000	101	24000	6540
20	12	17300	561	2660	78200	602000	124	25000	8370
21	.60	4000	6.5	1220	56300	208000	45	14000	1700
22	107	27400	20700	355	23300	25100	15	7000	284
23	102	40500	11800	170	11000	5050	5.0	2000	27
24	559	53800	104000	106	7500	2150	0	0	0
25	581	50700	85800	464	33800	48600	0	0	0
26	108	37200	10800	123	12000	3990	0	0	0
27	50	38200	5160	60	7500	1220	0	0	0
28	103	45900	13400	225	23300	20300	0	0	0
29	336	47400	65700	164	15700	12000	0	0	0
30	421	48100	76500	44	15100	2370	80	19100	4390
31	529	40600	77600	86	22400	6240	--	--	--
TOTAL	3083.60	--	501777.5	17205.7	--	2326664	1878.90	--	223539.6

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 22218.20
TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS) 3052884.1

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971 (ANALYSES MADE IN DISTILLED WATER)

DATE	TIME	TEMPERATURE (DEG C)	DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. PERCENT FINER THAN .002 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .004 MM
JULY							
25...	0630	22.0	343	44300	41000	45	52
27...	1800	28.0	50	45100	6090	66	84
AUG.							
11...	1915	23.0	2430	55600	365000	29	37

DATE	SUS. SED. FALL DIAM. PERCENT FINER THAN .016 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .062 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .125 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .250 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .500 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN 1.00 MM
JULY						
25...	76	93	98	100	--	--
27...	98	100	--	--	--	--
AUG.						
11...	48	75	88	96	99	100

09473500 SAN PEDRO RIVER AT WINKELMAN, ARIZ.

LOCATION.--Lat 32°58'38'', long 110°46'11'', in SE¼SW¼ sec.24, T.5 S., R.15 E., Pinal County, at gaging station 0.7 mile south of Winkelman, and 1.0 mile upstream from mouth.

DRAINAGE AREA.--4,471 sq mi, of which 696 sq mi is in Mexico.

PERIOD OF RECORD.--Specific conductance: January 1966 to September 1971.
Water temperatures: January 1966 to September 1971.
Sediment records: January 1966 to September 1971.

EXTREMES.--1970-71:
Specific conductance: Maximum daily, 1,300 micromhos July 23; minimum daily, 300 micromhos Oct. 4.
Water temperatures: Maximum, 36.0°C July 21; minimum, 5.5°C Feb. 16.
Sediment concentrations: Maximum daily, 104,000 mg/l July 24; minimum daily, no flow on many days.
Sediment discharge: Maximum daily, 255,000 tons July 21; minimum daily, 0 tons on many days.

Period of record:
Specific conductance: Maximum daily, 2,050 micromhos Sept. 15, 1969; minimum daily, 300 micromhos Oct. 4, 1970.
Water temperatures: Maximum, 42.0°C Sept. 10, 1968; minimum, 2.0°C Dec. 31, 1966.
Sediment concentrations: Maximum daily, 123,000 mg/l Aug 2, 1970; minimum daily, 0 tons on many days.
Sediment discharge: Maximum daily, 961,000 tons Dec. 20, 1967; minimum daily, 0 tons on many days.

REMARKS.--No flow Oct. 8-10, Oct. 12 to Nov. 21, Nov. 23, 24, Apr. 14, 18, 24-26, Apr. 29 to July 18.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	1200	1050	1050	1100	1100	---	---	---	430	1020
2	---	---	1020	1050	1020	1000	1150	---	---	---	350	890
3	635	---	1030	1180	---	1050	1150	---	---	---	550	890
4	300	---	1100	1050	1020	1050	1150	---	---	---	575	550
5	1050	---	1100	1050	1000	1050	1150	---	---	---	600	540
6	1100	---	1100	1050	1050	1050	1150	---	---	---	640	600
7	1100	---	1050	1100	1050	1050	1150	---	---	---	750	1050
8	1100	---	1050	1050	1050	1100	1150	---	---	---	900	1100
9	1100	---	1050	1050	1050	1050	1150	---	---	---	1000	620
10	1100	---	1050	1050	1050	1100	1150	---	---	---	1000	850
11	1000	---	1050	1050	1190	1190	1150	---	---	---	575	1020
12	1100	---	1050	1050	1100	1190	1150	---	---	---	465	1100
13	---	---	1050	1050	1190	1190	1190	---	---	---	850	1150
14	---	---	1050	1050	1100	1190	1190	---	---	---	340	1150
15	---	---	1050	1220	1100	1150	1190	---	---	---	380	1020
16	---	---	1050	1100	1150	1190	1200	---	---	---	400	1090
17	---	---	1050	1080	1150	1150	1200	---	---	---	450	1090
18	---	---	1050	1050	1100	1100	1100	---	---	475	610	1100
19	---	---	1050	1100	1190	1100	1100	---	---	475	650	590
20	---	---	1050	1050	1100	1100	1100	---	---	600	555	750
21	---	---	1050	1100	1100	1100	1150	---	---	685	465	920
22	---	1200	1050	1100	1100	1100	1150	---	---	950	450	810
23	---	1200	1050	1080	1100	1100	1150	---	---	1300	525	990
24	---	1200	1050	1050	1100	1100	1150	---	---	635	700	1100
25	---	1200	1050	1050	1150	1100	1150	---	---	620	550	1150
26	---	1200	1050	1050	1100	1150	1200	---	---	495	475	1150
27	---	1200	1050	1100	1100	1050	1150	---	---	580	700	1150
28	---	1200	1050	1020	1100	1100	1200	---	---	600	725	1150
29	---	1200	1050	1020	---	1100	1000	---	---	650	900	1150
30	---	1100	1050	1020	---	1100	1000	---	---	535	740	475
31	---	---	1050	1050	---	1100	---	---	---	415	710	---
AVG	---	---	1060	1070	1090	1100	1140	---	---	---	615	941

09473500 SAN PEDRO RIVER AT WINKELMAN, ARIZ.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	13.0	21.0	25.0	10.0	32.0	---	---	---	31.0	33.0
2	---	---	17.5	13.0	15.0	11.0	30.0	---	---	---	30.5	30.0
3	22.5	---	15.0	11.0	---	13.0	18.0	---	---	---	27.5	26.0
4	15.0	---	23.0	11.0	10.0	17.0	22.0	---	---	---	32.5	29.0
5	23.0	---	22.0	10.0	10.0	10.0	23.0	---	---	---	29.5	26.0
6	19.0	---	17.0	9.0	13.0	11.0	21.0	---	---	---	30.0	31.0
7	24.0	---	16.0	11.0	14.0	20.0	22.0	---	---	---	29.0	26.0
8	31.0	---	12.0	15.0	26.0	19.0	15.0	---	---	---	30.0	34.0
9	27.0	---	11.0	11.0	22.0	15.0	21.0	---	---	---	32.5	30.0
10	27.0	---	13.0	13.0	21.0	17.0	21.0	---	---	---	31.0	27.0
11	20.0	---	12.0	13.0	26.0	28.0	30.0	---	---	---	35.0	26.0
12	29.0	---	11.0	10.0	14.0	23.0	22.0	---	---	---	26.0	28.0
13	---	---	22.0	16.0	26.0	24.0	21.0	---	---	---	29.5	22.0
14	---	---	17.0	16.0	13.0	14.0	25.0	---	---	---	29.5	25.0
15	---	---	20.0	14.0	13.0	13.0	16.0	---	---	---	28.5	25.0
16	---	---	18.0	11.0	5.5	26.0	26.0	---	---	---	29.0	22.0
17	---	---	16.0	15.0	23.0	21.0	29.0	---	---	---	32.5	26.0
18	---	---	13.0	19.0	19.0	14.0	24.0	---	---	28.0	27.5	26.0
19	---	---	15.0	14.0	23.0	16.0	16.0	---	---	29.0	28.0	19.0
20	---	---	13.0	22.0	16.0	19.0	17.0	---	---	27.0	28.0	22.0
21	---	---	11.0	13.0	24.0	19.0	24.0	---	---	36.0	29.0	24.0
22	---	10.0	15.0	21.0	13.0	24.0	27.0	---	---	26.0	28.0	23.0
23	---	11.0	11.0	14.0	14.0	18.0	27.0	---	---	27.0	34.0	20.0
24	---	18.0	10.0	15.0	20.0	17.0	29.0	---	---	29.0	27.0	22.0
25	---	13.0	11.0	11.0	24.0	20.0	28.0	---	---	31.5	31.0	20.0
26	---	13.0	13.0	14.0	17.0	29.0	26.0	---	---	31.5	31.5	22.0
27	---	15.0	17.0	18.0	9.0	15.0	13.0	---	---	31.0	30.0	20.0
28	---	20.0	21.0	13.0	13.0	15.0	13.0	---	---	32.5	27.0	34.0
29	---	22.0	18.0	24.0	---	19.0	27.0	---	---	27.0	31.0	25.0
30	---	17.0	18.0	23.0	---	22.0	19.0	---	---	31.0	33.0	22.5
31	---	---	19.0	10.0	---	27.0	---	---	---	31.5	32.0	---
AVG	---	---	15.5	14.5	17.5	18.5	23.0	---	---	---	30.0	25.5

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	0	0	0	0	0	0	.40	50	.05
2	1.7	2290	167	0	0	0	.40	54	.06
3	130	45700	22500	0	0	0	.40	33	.04
4	54	13400	3970	0	0	0	.40	41	.04
5	.40	1400	1.5	0	0	0	.60	152	.25
6	1.1	2100	6.2	0	0	0	.40	102	.11
7	.10	375	.10	0	0	0	.60	100	.16
8	0	230	0	0	0	0	.60	98	.16
9	0	218	0	0	0	0	1.1	115	.34
10	0	109	0	0	0	0	1.1	127	.38
11	.10	157	.04	0	0	0	1.3	144	.51
12	0	120	0	0	0	0	1.3	132	.46
13	0	0	0	0	0	0	1.9	176	.90
14	0	0	0	0	0	0	1.9	228	1.2
15	0	0	0	0	0	0	3.4	213	2.0
16	0	0	0	0	0	0	3.9	178	1.9
17	0	0	0	0	0	0	4.9	170	2.2
18	0	0	0	0	0	0	4.9	159	2.1
19	0	0	0	0	0	0	5.5	206	3.1
20	0	0	0	0	0	0	6.1	300	4.9
21	0	0	0	--	0	0	7.5	199	4.0
22	0	0	0	.40	18	.02	9.0	227	5.5
23	0	0	0	0	36	0	9.0	232	5.6
24	0	0	0	--	40	--	8.2	232	5.1
25	0	0	0	.10	44	.01	9.0	232	5.6
26	0	0	0	.10	36	.01	11	236	7.0
27	0	0	0	.10	61	.02	12	205	6.6
28	0	0	0	.10	34	.01	12	236	7.6
29	0	0	0	.20	116	.06	12	225	7.3
30	0	0	0	.40	66	.07	12	215	7.0
31	0	0	0	--	--	--	11	213	6.3
TOTAL	187.40	--	26644.84	1.40	--	.20	153.80	--	88.46

09473500 SAN PEDRO RIVER AT WINKELMAN, ARIZ.--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	10	185	5.0	3.0	55	.45	5.5	138	2.0
2	10	196	5.3	4.4	60	.71	4.4	116	1.4
3	10	291	7.9	4.4	65	.77	4.9	120	1.6
4	9.0	210	5.1	5.5	73	1.1	5.5	136	2.0
5	6.8	150	2.8	6.1	116	1.9	4.9	77	1.0
6	6.1	148	2.4	6.1	120	2.0	4.4	75	.89
7	6.8	134	2.5	5.5	103	1.5	3.9	75	.79
8	7.5	122	2.5	4.9	79	1.0	3.0	71	.58
9	7.5	240	4.9	4.9	73	.97	2.2	58	.34
10	6.1	370	6.1	4.9	74	.98	1.9	72	.37
11	7.5	282	5.7	4.9	58	.77	1.6	22	.10
12	7.5	330	6.7	4.4	68	.81	1.6	65	.28
13	7.5	387	7.8	4.4	69	.82	1.6	48	.21
14	8.2	295	6.5	3.0	67	.54	1.3	87	.31
15	6.1	530	8.7	3.0	57	.46	2.2	87	.52
16	3.9	322	3.4	2.6	61	.43	2.6	96	.67
17	3.0	213	1.7	2.2	44	.26	2.2	99	.59
18	2.2	203	1.2	3.0	44	.36	2.2	98	.58
19	1.6	165	.71	3.9	50	.53	2.6	92	.65
20	1.3	160	.56	3.9	85	.90	3.9	97	1.0
21	1.1	155	.46	3.9	48	.51	4.4	115	1.4
22	1.1	151	.45	3.9	73	.77	3.9	100	1.1
23	.90	151	.37	3.9	90	.95	3.4	88	.81
24	.90	132	.32	3.9	91	.96	3.0	73	.59
25	1.3	109	.38	3.9	41	.43	1.6	106	.46
26	1.6	110	.48	3.9	83	.87	1.1	95	.28
27	2.2	99	.59	4.4	78	.93	1.3	56	.20
28	2.2	102	.61	4.9	104	1.4	1.1	38	.11
29	2.6	96	.67	--	--	--	1.1	65	.19
30	3.0	95	.77	--	--	--	1.1	63	.19
31	3.0	87	.70	--	--	--	.90	64	.16
TOTAL	148.50	--	93.27	117.7	--	24.08	85.30	--	21.37

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	.70	35	.07	0	0	0	0	0	0
2	1.1	30	.09	0	0	0	0	0	0
3	.60	73	.12	0	0	0	0	0	0
4	.60	60	.10	0	0	0	0	0	0
5	1.9	62	.32	0	0	0	0	0	0
6	1.3	56	.20	0	0	0	0	0	0
7	1.3	38	.13	0	0	0	0	0	0
8	1.3	44	.15	0	0	0	0	0	0
9	.60	38	.06	0	0	0	0	0	0
10	.40	31	.03	0	0	0	0	0	0
11	.30	56	.05	0	0	0	0	0	0
12	.20	32	.02	0	0	0	0	0	0
13	.40	33	.04	0	0	0	0	0	0
14	0	11	0	0	0	0	0	0	0
15	.60	26	.04	0	0	0	0	0	0
16	.30	14	.01	0	0	0	0	0	0
17	.10	16	0	0	0	0	0	0	0
18	0	18	0	0	0	0	0	0	0
19	.20	29	.02	0	0	0	0	0	0
20	.30	34	.03	0	0	0	0	0	0
21	.40	15	.02	0	0	0	0	0	0
22	.20	14	.01	0	0	0	0	0	0
23	.20	40	.02	0	0	0	0	0	0
24	0	29	0	0	0	0	0	0	0
25	0	20	0	0	0	0	0	0	0
26	0	16	0	0	0	0	0	0	0
27	.10	19	.01	0	0	0	0	0	0
28	.10	26	.01	0	0	0	0	0	0
29	0	19	0	0	0	0	0	0	0
30	0	43	0	0	0	0	0	0	0
31	--	--	--	0	0	0	--	--	--
TOTAL	13.20	--	1.55	0	--	0	0	--	0

09473500 SAN PEDRO RIVER AT WINKELMAN, ARIZ.--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	0	0	0	389	83700	108000	121	22600	11900
2	0	0	0	58	49000	7670	23	19400	1200
3	0	0	0	8.2	53600	1190	63	35200	16200
4	0	0	0	362	67500	101000	222	73600	51700
5	0	0	0	60	75500	11900	44	35700	4240
6	0	0	0	13	40000	1610	12	17800	577
7	0	0	0	13	43900	1540	3.9	4500	47
8	0	0	0	5.5	21300	383	232	13800	39500
9	0	0	0	22	77600	4430	434	44900	75500
10	0	0	0	6.8	5000	92	28	36200	2740
11	0	0	0	1080	68800	286000	19	17300	887
12	0	0	0	1270	76300	267000	10	11500	311
13	0	0	0	865	64000	179000	5.5	5500	82
14	0	0	0	937	70300	177000	4.4	1130	13
15	0	0	0	1020	63200	173000	1.9	460	2.4
16	0	0	0	764	74700	177000	.90	304	.74
17	0	0	0	452	56400	78900	.30	228	.18
18	0	0	0	878	49500	196000	.10	162	.04
19	91	31900	20400	1900	48800	370000	60	74900	12100
20	65	49100	18200	2230	75700	469000	51	70600	9720
21	3.4	5900	54	2590	83000	585000	51	60800	8370
22	.20	58	.14	2070	56800	356000	18	39800	1930
23	.90	376	.91	218	33200	19500	11	22400	665
24	47	104000	14800	144	28200	13200	9.0	8300	202
25	306	97800	101000	154	51700	24200	4.9	2500	33
26	219	89600	55600	240	49800	34500	2.2	955	5.7
27	37	86400	8630	66	32100	5720	1.6	578	2.5
28	36	67800	6330	172	48800	28400	.40	969	1.0
29	35	29600	2800	84	33700	7640	411	13900	39200
30	366	94500	123000	51	29600	4080	370	21500	35100
31	128	78100	27600	39	42800	4510	--	--	--
TOTAL	1334.50	--	378415.05	18161.5	--	3693465	2215.10	--	312229.56

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 22418.40
TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS) 717518.33

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971
(ANALYSES MADE IN DISTILLED WATER)

DATE	TIME	TEM-PERATURE (DEG C)	DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)	SUS. SED. FALL DIAM. PERCENT FINER THAN .002 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .004 MM
OCT.							
03...	0945	22.0	30	31300	2540	60	75
JULY							
20...	1150	32.0	150	99100	40100	53	65
25...	1500	33.0	690	145000	270000	42	62
30...	1440	24.0	1100	154000	457000	38	47
AUG.							
05...	1700	31.0	14	87300	3300	63	81
12...	1035	25.0	2090	78600	444000	41	50
15...	1405	27.0	2290	70000	433000	31	37
21...	1100	27.0	4730	71000	907000	42	50
28...	0950	27.0	399	91000	98000	44	53

DATE	SUS. SED. FALL DIAM. PERCENT FINER THAN .016 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .062 MM	SUS. SED. SIEVE DIAM. PERCENT FINER THAN .062 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .125 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .250 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .500 MM
OCT.						
03...	100	--	--	--	--	--
JULY						
20...	95	100	--	--	--	--
25...	84	98	--	99	100	--
30...	75	97	--	99	100	--
AUG.						
05...	99	--	100	--	--	--
12...	68	90	--	96	99	100
15...	55	84	--	93	98	100
21...	63	91	--	98	100	--
28...	73	97	--	99	100	--

09474000 GILA RIVER AT KELVIN, ARIZ.
(Irrigation network station)

LOCATION.--Lat 33°06'11", long 110°58'26", in NE¼NW¼ sec. 12, T. 4 S., R. 13 E., Pinal County, at Florence-Kelvin road bridge at Kelvin, 200 ft upstream from Mineral Creek, 700 ft upstream from gaging station, 18 miles downstream from San Pedro River, 19 miles upstream from Ashurst-Hayden Dam, and 49 miles downstream from Coolidge Dam.

DRAINAGE AREA.--18,011 sq mi at gaging station, of which 5,125 sq mi is downstream from Coolidge Dam.

PERIOD OF RECORD.--Chemical analyses: December 1950 to September 1971.
Water temperatures: December 1950 to September 1971.
Sediment records: January 1958 to September 1971.

EXTREMES.--1970-71:
Dissolved solids: Maximum, 2,400 mg/l June 1-30; minimum, 402 mg/l Sept. 30.
Hardness: Maximum, 1,300 mg/l July 1-19; minimum, 210 mg/l Sept. 19-20.
Specific conductance: Maximum daily, 3,820 micromhos Apr. 22; minimum daily, 482 micromhos Aug. 22.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	MEAN DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)
OCT.												
01-03	190	25	--	102	31	--	270	--	204	0	266	372
04...	190	23	--	95	18	--	158	--	214	0	161	220
05-31	112	24	--	112	32	253	--	10	207	0	300	376
NOV.												
01-30	118	24	--	115	34	--	285	--	213	0	296	398
DEC.												
01-26	219	26	60	110	39	320	--	11	235	0	330	440
27-31	206	26	100	130	43	360	--	11	251	0	380	480
JAN.												
01-20	49	28	160	190	38	240	--	16	206	0	520	310
21-31	97	25	130	150	41	340	--	14	228	0	420	490
FEB.												
01-28	206	26	100	120	48	390	--	9.4	257	0	310	570
MAR.												
01-16	300	28	40	140	47	450	--	11	245	0	340	650
17-31	142	25	10	170	56	500	--	13	222	0	470	770
APR.												
01-30	42	22	40	190	52	480	--	18	172	0	600	720
MAY												
01-31	16	24	10	220	57	430	--	18	136	0	730	670
JUNE												
01-30	1.4	33	10	320	91	330	--	13	250	0	1000	490
JULY												
01-19	2.8	40	30	330	110	250	--	8.9	119	0	1200	340
20-21	25	33	20	110	20	80	--	8.1	256	0	220	71
22-24	5.7	35	30	250	61	270	--	12	274	0	700	370
25-31	60	29	20	87	17	68	--	7.0	275	0	180	36
AUG.												
01-05	139	26	10	88	17	73	--	6.5	210	0	170	58
06-07	34	28	10	140	22	120	--	10	261	0	380	98
08-11	78	29	10	230	30	210	--	22	200	0	750	230
12-22	1310	24	10	77	11	38	--	5.3	218	0	140	13
23-31	142	24	10	110	18	77	--	8.4	185	0	300	58
SEP.												
01-03	171	27	10	120	18	88	--	10	247	0	280	67
04-05	125	24	20	69	13	66	--	5.8	220	0	140	29
06-08	28	26	0	170	26	100	--	9.2	228	0	460	81
09...	466	29	10	100	16	48	--	6.0	265	0	150	39
10-18	39	31	10	220	35	190	--	16	207	0	730	190
19-20	75	23	10	62	13	57	--	5.3	236	0	110	20
21-29	54	32	10	200	39	190	--	13	223	0	680	170
30...	700	22	20	82	11	30	--	4.7	174	0	140	21
WTD. AVG.	--	25	41	115	31	--	--	9.3	224	0	292	326
TIME WTD. AVG.	139	27	45	171	47	--	--	12	210	0	511	432
TOT. LOAD (TONS)	--	3470	5	15800	4280	--	--	1160	30800	0	40200	44800

09474000 GILA RIVER AT KELVIN, ARIZ.--Continued

EXTREMES, 1970-71.--Continued

Water temperatures: Maximum, 32.0°C Aug. 7; minimum, 5.5°C Jan. 7, 10.
Sediment concentrations: Maximum daily, 102,000 mg/l July 26; minimum daily, 0 mg/l July 3.
Sediment discharge: Maximum daily, 413,000 tons Aug. 20 minimum daily, 0 ton July 2-5, 11.

Period of record:

Dissolved solids: Maximum, 4,330 mg/l Jan. 3, 1966; minimum, 294 mg/l Sept. 24, 1954, Feb. 12, 1963.
Hardness: Maximum, 2,610 mg/l Jan. 3, 1966; minimum, 152 mg/l Sept. 1-30, 1957.
Specific conductance: Maximum daily, 5,120 micromhos May 22, 1961; minimum daily, 407 micromhos Jan. 20, 1952.
Water temperatures: Maximum, 36.5°C July 25, Aug. 20, 1953; minimum, 3.5°C Jan. 13, 1962.
Sediment concentrations: Maximum daily, 153,000 mg/l July 30, 1961; minimum daily, 0 mg/l July 3, 1971.
Sediment discharge: Maximum daily, 740,000 tons Dec. 23, 1965; minimum daily, 0 ton on July 2-5, 11, 1971.

REMARKS.--No appreciable inflow from Mineral Creek between sampling point and gaging station except during periods of heavy local rains. Sediment discharge figures include sediment load from Mineral Creek.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
OCT.											
01-03	--	.63	--	270	1170	1.59	384	217	6.0	1950	7.9
04...	--	.61	--	190	783	1.06	312	136	3.9	1340	7.6
05-31	1.0	.20	--	270	1210	1.66	410	240	5.4	1990	8.2
NOV.											
01-30	--	.11	--	290	1260	1.71	425	250	6.0	2090	8.2
DEC.											
01-26	1.1	.30	.11	310	1400	1.90	440	247	6.7	2300	7.9
27-31	1.1	.50	.04	340	1600	2.18	510	304	7.0	2560	7.9
JAN.											
01-20	1.6	.90	.15	280	1400	1.90	630	461	4.2	2140	7.4
21-31	1.4	.70	.10	380	1600	2.18	540	353	6.3	2480	7.8
FEB.											
01-28	1.4	.10	.08	340	1600	2.18	510	299	7.6	2740	8.4
MAR.											
01-16	1.3	.50	.09	390	1790	2.43	540	340	8.4	2970	8.2
17-31	1.4	.30	.06	480	2120	2.88	650	470	8.5	3530	8.2
APR.											
01-30	1.2	.41	.09	510	2170	2.95	690	550	8.0	3630	8.1
MAY											
01-31	1.3	.35	.06	310	2220	3.02	780	670	6.7	3430	7.8
JUNE											
01-30	1.1	.15	.06	340	2400	3.26	1200	970	4.2	3340	7.8
JULY											
01-19	.6	.20	.09	270	2340	3.18	1300	1200	3.0	2880	7.8
20-21	.9	.64	.37	190	672	.91	360	150	1.8	936	7.9
22-24	1.0	.64	.12	290	1840	2.50	870	650	4.0	2490	8.2
25-31	.8	.68	.31	160	564	.77	290	62	1.7	781	7.8
AUG.											
01-05	.8	.32	.21	170	544	.74	290	120	1.9	888	7.8
06-07	1.0	.75	.21	210	931	1.27	440	230	2.5	1330	7.7
08-11	1.8	2.7	.15	240	1610	2.19	700	530	3.5	2280	7.4
12-22	.8	.51	.31	120	419	.57	240	59	1.1	636	7.6
23-31	.8	.78	.21	140	691	.94	350	200	1.8	1030	7.4
SEP.											
01-03	.6	.75	.25	140	736	1.00	370	170	2.0	1090	7.5
04-05	.7	.47	.28	130	458	.62	230	45	1.9	710	7.7
06-08	.7	.88	.21	150	989	1.35	530	340	1.9	1400	7.5
09...	.5	.45	.31	110	521	.71	320	98	1.2	806	7.4
10-18	1.2	.89	.18	210	1520	2.07	690	520	3.1	2120	7.8
19-20	.8	.60	.25	170	410	.56	210	15	1.7	626	7.7
21-29	.3	1.0	.18	210	1440	1.96	660	480	3.2	2020	7.8
30...	.5	1.0	.40	80	402	.55	250	110	.8	612	7.1
WTD. AVG.	--	.43	.18	258	1150	1.57	418	233	4.7	1870	7.9
TIME WTD. AVG.	--	.42	.12	308	1610	2.19	626	452	5.4	2490	7.9
TOT. LOAD (TONS)	--	59	22	35	158000	--	--	--	--	--	--

09474000 GILA RIVER AT KELVIN, ARIZ.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	1960	2150	2370	2620	2700	---	3270	3120	3040	781	1000
2	1990	2020	2150	2230	2600	2780	---	3260	3100	2970	---	794
3	1930	2090	2150	2160	2590	---	---	3600	3240	2950	629	1420
4	1340	2040	2150	2180	2590	2810	3490	3720	3250	3020	1420	597
5	1980	1990	2170	2220	---	2840	3510	3690	3360	2970	649	792
6	2020	2010	2150	---	---	2890	3660	3300	3190	3020	1030	1170
7	2030	2050	2190	2220	2630	2900	3530	3190	3160	2970	1570	1540
8	2060	2060	2210	2180	2630	---	3510	3250	3360	3000	2050	1380
9	2060	2070	2270	2200	2620	2900	3420	---	3380	3130	1990	804
10	2040	2090	2300	2200	2670	3000	3480	3620	---	3100	2150	1400
11	2030	2100	2300	2200	2620	2990	3510	3370	3360	3110	2640	1900
12	---	2110	2300	2160	2580	3000	3490	3510	3360	2980	538	2120
13	2030	2090	2300	2120	2580	3060	3460	3360	---	3050	762	2200
14	2030	2090	2300	---	2670	3060	3620	3680	---	2980	560	1870
15	2030	2140	2370	---	2670	3100	3560	3520	---	2970	507	2320
16	2000	2080	---	2200	2580	3160	3390	3240	---	2970	514	2190
17	2010	2090	2340	2220	2580	3270	3490	3250	3400	3020	498	2190
18	2000	2100	2360	2240	2640	3360	---	3380	3090	3010	888	2290
19	1950	2130	2330	2300	2590	3580	3660	---	3140	3060	902	587
20	1990	2130	2370	1950	2600	3540	3760	3430	3200	840	598	661
21	1930	2130	2350	2440	2660	3440	3760	3240	3410	1160	541	1940
22	1940	2120	2350	2470	2700	3450	3820	---	3230	2150	482	1400
23	1930	2130	2400	2550	2660	3470	3520	3160	3250	2970	888	1800
24	1940	2130	2400	2500	2680	---	3450	3250	3250	2730	1320	2130
25	1960	2130	2420	2470	2610	3470	3400	3300	3410	1100	898	1710
26	2030	2120	2400	2500	2700	3510	3330	3400	---	614	642	1870
27	2050	2140	2540	2470	2700	3430	3660	3290	3440	669	1060	2150
28	2010	2140	2570	2580	2720	3510	---	3200	3430	897	865	2320
29	2010	2140	2630	2550	---	3540	3620	3230	3280	868	1060	2280
30	1970	2160	---	---	---	3560	3520	3210	3280	1010	1140	597
31	2000	---	---	2580	---	3600	---	3230	---	612	1080	---
AVG	1980	2090	2320	2310	2630	3210	3540	3360	3280	2350	1020	1580

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	13.5	10.0	---	22.0	25.5	26.5	25.5	30.0
2	---	---	---	---	13.5	11.0	---	22.0	25.5	26.5	---	29.0
3	---	---	---	---	11.0	---	---	23.5	25.5	26.5	26.5	29.0
4	---	---	---	---	10.0	13.5	21.0	22.0	25.5	25.5	25.5	27.0
5	---	---	---	---	---	15.0	22.0	22.0	25.5	26.5	30.0	27.0
6	---	---	---	---	---	15.0	23.5	22.0	25.5	26.5	30.0	29.0
7	---	---	---	5.5	12.0	15.0	23.5	22.0	25.5	26.5	32.0	28.0
8	---	---	---	7.5	14.5	---	23.5	22.0	25.5	26.5	30.0	28.0
9	---	---	---	10.0	13.0	15.5	24.5	---	25.5	26.5	31.0	29.0
10	---	---	---	5.5	13.5	15.5	26.5	23.5	---	26.5	30.0	29.0
11	---	---	---	10.0	13.5	16.5	26.5	23.5	25.5	26.5	30.0	30.0
12	---	---	---	11.5	14.5	16.5	26.5	22.0	25.5	27.0	---	30.0
13	---	---	---	13.0	15.5	16.0	26.5	23.5	---	26.5	---	30.0
14	---	---	---	---	15.5	16.5	20.0	23.5	---	26.5	---	29.0
15	---	---	---	---	15.5	16.5	18.5	23.5	---	26.5	---	28.0
16	---	---	---	15.0	15.5	18.0	22.0	23.5	---	26.5	---	28.0
17	---	---	---	15.0	14.5	17.0	23.5	23.5	25.5	25.5	---	28.0
18	---	---	---	15.5	14.5	16.5	---	23.5	25.5	26.5	---	26.0
19	---	---	---	18.0	15.0	16.5	18.0	---	25.5	26.5	---	27.0
20	---	---	---	15.5	14.0	19.0	21.0	24.5	25.5	---	---	26.0
21	---	---	---	15.5	13.5	18.0	20.0	24.5	25.5	25.5	---	25.0
22	---	---	---	15.5	12.0	20.0	21.0	---	---	25.5	---	25.0
23	---	---	---	15.0	11.0	20.0	22.0	24.5	25.5	26.5	---	24.0
24	---	---	---	9.0	15.5	---	21.0	25.5	25.5	28.0	30.0	26.0
25	---	---	---	14.5	15.5	21.0	21.0	25.5	26.5	28.0	30.0	26.0
26	---	---	---	14.5	14.5	22.0	20.0	25.5	---	29.0	27.0	27.0
27	---	---	---	13.5	12.0	23.5	20.0	25.5	26.5	26.5	28.0	25.0
28	---	---	---	14.5	10.0	23.5	---	24.5	26.5	26.5	---	27.0
29	---	---	---	9.0	---	23.5	21.0	24.5	26.5	26.5	28.0	24.0
30	---	---	---	---	---	23.5	21.0	25.5	26.5	26.5	30.0	30.0
31	---	---	---	13.5	---	21.0	---	25.5	---	26.5	30.0	---
AVG	---	---	---	---	13.5	17.5	22.0	23.5	---	26.5	---	27.5

09474000 GILA RIVER AT KELVIN, ARIZ.--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	150	110	45	122	322	106	133	110	40
2	150	200	81	118	210	67	139	150	56
3	270	3500	2550	122	227	75	170	364	167
4	190	7450	3820	130	155	54	195	455	240
5	162	2450	1070	125	94	32	209	555	313
6	153	554	229	121	110	36	211	481	274
7	121	342	112	120	105	34	214	459	265
8	115	241	75	99	95	25	231	415	259
9	118	213	68	96	105	27	221	358	214
10	120	200	65	96	107	28	221	384	232
11	125	294	99	99	104	28	221	416	248
12	124	290	97	102	120	33	218	322	190
13	120	222	72	96	98	25	221	332	198
14	118	220	73	94	90	23	228	391	241
15	120	215	70	95	141	36	241	410	267
16	113	260	79	102	113	31	251	419	284
17	106	232	66	102	130	36	254	438	300
18	101	219	60	99	124	33	260	395	277
19	95	150	38	105	193	55	268	470	340
20	100	105	28	117	177	56	271	510	373
21	94	99	25	121	196	64	279	349	263
22	89	88	21	144	177	69	249	202	136
23	89	89	21	146	139	55	206	263	146
24	89	110	26	144	163	63	200	279	151
25	102	152	42	148	161	64	189	200	102
26	99	139	37	133	150	54	200	400	216
27	102	125	34	136	161	59	226	329	200
28	99	130	35	141	138	53	204	788	434
29	104	166	47	139	109	41	216	415	242
30	117	340	107	141	121	46	206	244	136
31	118	560	178	--	--	--	176	230	109
TOTAL	3773	--	9370	3553	--	1408	6728	--	6913

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	86	170	39	151	197	80	291	338	266
2	59	155	25	155	180	75	297	295	237
3	65	112	20	153	126	52	300	290	235
4	62	120	20	166	212	95	297	312	250
5	51	110	15	174	253	119	291	386	303
6	51	100	14	176	145	69	291	338	266
7	44	98	12	176	163	77	291	320	251
8	43	76	8.8	176	105	50	297	370	297
9	50	53	7.2	176	173	82	306	455	376
10	41	44	4.9	178	157	75	315	380	323
11	44	67	8.0	189	186	95	306	310	256
12	42	89	10	180	180	87	288	316	246
13	41	82	9.1	178	183	88	300	409	331
14	49	85	11	176	150	71	315	418	356
15	40	90	9.7	184	189	94	315	373	317
16	41	99	11	193	178	93	303	335	274
17	40	50	5.4	202	190	104	300	368	298
18	37	36	3.6	244	390	257	312	391	329
19	34	45	4.1	244	359	237	315	370	315
20	61	213	39	244	332	219	254	291	200
21	84	210	48	244	359	237	170	155	71
22	78	180	38	246	385	256	127	104	36
23	77	114	24	226	285	174	99	119	32
24	89	112	27	233	305	192	89	90	22
25	94	180	46	249	302	203	77	83	17
26	88	158	38	291	380	299	71	100	19
27	110	200	59	288	380	295	70	66	12
28	111	150	45	288	360	280	64	52	9.0
29	111	104	31	--	--	--	62	51	8.5
30	113	92	28	--	--	--	60	39	6.3
31	115	90	28	--	--	--	58	46	7.2
TOTAL	2051	--	688.8	5780	--	4055	6931	--	5966.0

09474000 GILA RIVER AT KELVIN, ARIZ.--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	56	40	6.0	20	28	1.5	3.5	11	.10
2	52	30	4.2	20	34	1.8	2.0	20	.11
3	50	30	4.1	20	25	1.4	1.5	25	.10
4	50	28	3.8	23	29	1.8	1.5	22	.09
5	49	36	4.8	22	19	1.1	1.6	24	.10
6	44	31	3.7	25	45	3.0	7.0	38	.72
7	44	49	5.8	28	29	2.2	4.6	23	.29
8	46	31	3.9	27	20	1.5	2.2	14	.08
9	45	35	4.3	20	19	1.0	1.4	17	.06
10	43	31	3.6	18	17	.83	1.0	19	.05
11	45	29	3.5	20	29	1.6	1.0	20	.05
12	43	31	3.6	18	22	1.1	.90	16	.04
13	43	44	5.1	18	26	1.3	1.2	15	.05
14	40	41	4.4	17	20	.92	2.4	15	.10
15	38	35	3.6	16	14	.60	1.8	14	.07
16	53	42	6.0	16	14	.60	.70	13	.02
17	50	45	6.1	20	17	.92	.60	11	.02
18	42	45	5.1	15	10	.41	.60	31	.05
19	39	46	4.8	12	10	.32	1.2	35	.11
20	37	33	3.3	12	10	.32	.90	24	.06
21	37	52	5.2	14	11	.42	.40	18	.02
22	35	61	5.8	16	11	.48	.40	45	.05
23	42	48	5.4	12	10	.32	.30	93	.08
24	40	56	6.0	11	9	.27	.30	50	.04
25	40	44	4.8	10	7	.19	.30	65	.05
26	40	55	5.9	10	10	.27	.30	53	.04
27	35	44	4.2	6.7	6	.11	.40	18	.02
28	30	41	3.3	5.2	4	.06	.60	51	.08
29	25	30	2.0	5.2	3	.04	.60	85	.14
30	25	48	3.2	4.9	5	.07	.70	52	.10
31	--	--	--	4.3	11	.13	--	--	--
TOTAL	1258	--	135.5	486.3	--	26.58	41.90	--	2.89

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	.60	6	.01	130	56200	19700	64	20400	3530
2	.60	2	0	106	44900	12900	300	28600	23200
3	.60	0	0	39	37700	3970	150	21400	8670
4	.70	1	0	265	58000	86800	200	55100	29800
5	.70	1	0	154	67900	31200	50	48900	6600
6	.70	6	.01	37	59800	5970	20	27500	1490
7	.70	5	.01	30	43400	3520	15	11000	446
8	.70	15	.03	15	10000	405	50	39800	5370
9	.70	13	.02	16	1860	80	466	49900	62800
10	.90	4	.01	25	5540	374	100	34700	9370
11	.90	1	0	255	9940	39200	50	17800	2400
12	.90	6	.01	1390	79000	322000	50	8000	1080
13	.90	4	.01	825	60200	143000	30	2000	162
14	.90	16	.04	928	31100	207000	25	370	25
15	.90	8	.02	1070	77400	233000	20	230	12
16	.90	16	.04	998	74300	205000	20	132	7.1
17	1.0	9	.02	332	51200	53000	15	89	3.6
18	1.0	7	.02	1360	51500	255000	30	95	7.7
19	40	81600	8810	1420	28500	130000	50	54100	7300
20	35	71800	6790	2270	66700	413000	100	58200	15700
21	15	21400	867	2070	63500	358000	30	35700	2890
22	5.0	4500	61	1790	54100	274000	30	43900	3560
23	2.0	436	2.4	354	24000	24700	30	30600	2480
24	10	72800	1970	142	19900	7630	20	11500	621
25	40	91200	9850	192	13700	7750	10	5000	135
26	110	102000	30300	238	41900	30200	10	840	23
27	40	78500	8480	74	30600	6110	5.0	292	3.9
28	25	70700	4770	100	21500	7030	5.0	175	2.4
29	20	59300	3200	64	21900	3780	350	5000	4730
30	55	54100	8030	58	37200	5830	700	17300	32700
31	130	81600	28600	55	26500	3940	--	--	--
TOTAL	541.40	--	111730.65	16802	--	2894089	2995.0	--	225118.7

TOTAL DISCHARGE FOR YEAR (CFS-DAYS)	50940.50
TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS)	3259504.12

09474000 GILA RIVER AT KELVIN, ARIZ.--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971 (ANALYSES MADE IN DISTILLED WATER)

DATE	TIME	TEMPERATURE (DEG C)	DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. PERCENT FINER THAN .002 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .004 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .016 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .062 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .125 MM	SUS. SED. FALL DIAM. PERCENT FINER THAN .250 MM
AUG.											
04...	1800	25.5	1160	158000	495000	39	49	66	98	100	--
12...	1700	--	12	70300	2280	44	52	78	97	99	100
20...	1700	--	2490	71200	479000	32	46	63	92	99	100

09502000 SALT RIVER BELOW STEWART MOUNTAIN DAM, ARIZ.
(Irrigation network station)

LOCATION.--Lat 33°33'59", long 111°32'08", in sec. 33, T. 3 N., R. 8 E. (unsurveyed), Maricopa County, at Stewart Mountain Dam, 3.5 miles upstream from gaging station, and 9.5 miles upstream from Verde River.

DRAINAGE AREA.--6,232 sq mi, at gaging station, of which 21 sq mi is downstream from Stewart Mountain Dam.

PERIOD OF RECORD.--Chemical analyses: December 1950 to September 1971.
Water temperatures: December 1950 to September 1971.

EXTREMES.--1970-71:
Specific conductance: Maximum daily, 1,400 micromhos July 30; minimum daily, 1,040 micromhos Oct. 1, 2.
Water temperatures: Maximum, 25.0°C Sept. 27, 28; minimum, 10.0°C on several days during February and March.

Period of record:
Specific conductance: Maximum daily, 2,490 micromhos Aug. 20, 1951; minimum daily, 620 micromhos Mar. 28, 1953.
Water temperatures: Maximum, 29.0°C Aug. 24, 26, 27, 1951, Sept. 11, 12, 1969; minimum, 9.5°C Feb. 14, 1951.

REMARKS.--No inflow between sampling point and gaging station except during periods of heavy local rains. No flow at sampling point Oct. 13 to Feb. 1.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)
OCT. 01-12	--	795	15	--	50	12	139	4.8	143	5	52	222
FEB. 15...	0700	750	19	80	50	14	150	5.7	164	0	59	240
MAR. 15...	0700	1425	18	10	51	14	140	5.3	160	0	52	230
APR. 15...	0700	1275	20	20	54	14	200	6.0	172	0	56	300
MAY 15...	0700	1300	24	20	52	15	180	5.4	170	0	66	290
JUNE 15...	0700	1170	16	10	56	15	190	5.1	173	0	68	300
JULY 15...	0700	1475	17	10	52	14	200	5.7	175	0	66	270
AUG. 15...	0730	700	17	20	56	15	200	5.3	107	35	69	300
SEP. 15...	0730	495	18	10	55	15	190	5.4	177	0	71	300

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
OCT. 01-12	.3	.04	--	130	543	571	.74	174	48	4.8	1050	8.4
FEB. 15...	.5	.10	.05	90	--	620	.84	180	45	4.8	1090	7.9
MAR. 15...	.5	.10	.06	160	--	590	.80	180	54	4.5	1030	8.0
APR. 15...	.7	.00	.15	160	--	736	1.00	190	51	6.3	1260	7.7
MAY 15...	.4	.11	.09	100	--	717	.98	190	52	5.7	1300	8.2
JUNE 15...	.3	.06	.03	170	--	736	1.00	200	60	5.8	1310	8.2
JULY 15...	.4	.00	.00	150	--	711	.95	190	44	--	1330	7.9
AUG. 15...	.5	.12	.06	160	--	751	1.02	200	55	6.1	1370	8.4
SEP. 15...	.3	.22	.18	130	--	743	1.01	200	54	5.9	1330	8.3

09502000 SALT RIVER BELOW STEWART MOUNTAIN DAM, ARIZ.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1040	---	---	---	---	1080	1210	1280	1330	1350	1370	1340
2	1040	---	---	---	1120	1060	1230	1260	1330	1350	1380	1330
3	1050	---	---	---	1120	1060	1200	1250	1340	1360	1380	1340
4	1050	---	---	---	1120	1060	1190	1260	1340	1370	1380	1360
5	1050	---	---	---	1120	1060	1240	1280	1340	1370	1380	1360
6	1050	---	---	---	1120	1060	1240	1280	1330	1370	1380	1350
7	1050	---	---	---	1120	1080	1240	1270	1340	1370	1380	1350
8	1050	---	---	---	1120	1060	1240	1270	1340	1370	1380	1350
9	1050	---	---	---	1120	1070	1240	1280	1340	1360	1380	1340
10	1050	---	---	---	1120	1060	1250	1290	1340	1350	1380	1350
11	1050	---	---	---	1120	1090	1240	1290	1340	1370	1380	1340
12	1050	---	---	---	1120	1120	1240	1290	1350	1370	1380	1340
13	---	---	---	---	1120	1110	1250	1290	1350	1380	1380	1340
14	---	---	---	---	1120	1060	1250	1290	1350	1370	1380	1340
15	---	---	---	---	1120	1120	1270	1290	1350	1380	1380	1340
16	---	---	---	---	1120	1170	1260	1290	1360	1380	1380	1340
17	---	---	---	---	1120	1180	1250	1290	1350	1380	1360	1340
18	---	---	---	---	1110	1200	1260	1290	1350	1380	1360	1350
19	---	---	---	---	1120	1160	1260	1300	1350	1380	1350	1340
20	---	---	---	---	1110	1180	1260	1290	1360	1380	1340	1340
21	---	---	---	---	1120	1210	1260	1290	1360	1380	1360	1340
22	---	---	---	---	1110	1200	1260	1290	1360	1380	1340	1320
23	---	---	---	---	1120	1210	1260	1300	1360	1380	1360	1340
24	---	---	---	---	1100	1210	1260	1300	1350	1380	1360	1340
25	---	---	---	---	1080	1220	1260	1300	1360	1380	1360	1340
26	---	---	---	---	1100	1220	1260	1320	1360	1380	1360	1360
27	---	---	---	---	1090	1220	1260	1320	1360	1380	1360	1380
28	---	---	---	---	1070	1230	1260	1320	1360	1380	1360	1390
29	---	---	---	---	---	1240	1270	1300	1360	1380	1350	1380
30	---	---	---	---	---	1240	1270	1330	1360	1400	1360	1380
31	---	---	---	---	---	1240	---	1330	---	1380	1370	---
AVG	---	---	---	---	1110	1140	1250	1290	1350	1370	1370	1350

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.0	---	---	---	---	11.0	12.0	14.0	15.0	17.0	19.0	22.0
2	19.0	---	---	---	10.0	10.0	12.0	14.0	15.0	17.0	19.0	23.0
3	19.0	---	---	---	10.0	10.0	12.0	14.0	15.0	17.0	19.0	24.0
4	19.0	---	---	---	10.0	10.0	12.0	14.0	15.0	17.0	20.0	23.0
5	19.0	---	---	---	10.0	10.0	14.0	14.0	15.0	17.0	20.0	23.0
6	19.0	---	---	---	10.0	12.0	13.0	14.0	15.0	17.0	20.0	23.0
7	19.0	---	---	---	10.0	11.0	14.0	14.0	15.0	17.0	20.0	24.0
8	19.0	---	---	---	10.0	11.0	14.0	14.0	15.0	17.0	20.0	24.0
9	19.0	---	---	---	10.0	11.0	14.0	14.0	15.0	17.0	19.0	24.0
10	19.0	---	---	---	10.0	11.0	12.0	14.0	15.0	17.0	20.0	24.0
11	19.0	---	---	---	11.0	11.0	12.0	14.0	15.0	17.0	20.0	24.0
12	19.0	---	---	---	11.0	12.0	12.0	14.0	15.0	18.0	20.0	24.0
13	---	---	---	---	12.0	12.0	12.0	14.0	16.0	18.0	20.0	24.0
14	---	---	---	---	12.0	12.0	12.0	14.0	16.0	18.0	20.0	24.0
15	---	---	---	---	12.0	12.0	12.0	14.0	16.0	18.0	20.0	24.0
16	---	---	---	---	12.0	11.0	12.0	14.0	16.0	18.0	20.0	24.0
17	---	---	---	---	12.0	11.0	12.0	14.0	16.0	18.0	21.0	24.0
18	---	---	---	---	12.0	11.0	12.0	14.0	16.0	18.0	21.0	24.0
19	---	---	---	---	12.0	11.0	12.0	14.0	16.0	18.0	21.0	23.0
20	---	---	---	---	12.0	11.0	12.0	14.0	16.0	18.0	21.0	23.0
21	---	---	---	---	11.0	11.0	13.0	14.0	16.0	18.0	21.0	24.0
22	---	---	---	---	11.0	11.0	13.0	15.0	17.0	18.0	21.0	24.0
23	---	---	---	---	11.0	11.0	13.0	15.0	17.0	18.0	22.0	24.0
24	---	---	---	---	11.0	12.0	13.0	15.0	17.0	18.0	23.0	24.0
25	---	---	---	---	11.0	12.0	13.0	15.0	17.0	18.0	23.0	24.0
26	---	---	---	---	11.0	12.0	13.0	15.0	17.0	18.0	22.0	24.0
27	---	---	---	---	11.0	12.0	13.0	15.0	17.0	18.0	23.0	25.0
28	---	---	---	---	11.0	12.0	13.0	15.0	17.0	18.0	22.0	25.0
29	---	---	---	---	---	12.0	13.0	14.0	17.0	19.0	23.0	24.0
30	---	---	---	---	---	12.0	13.0	15.0	17.0	19.0	22.0	24.0
31	---	---	---	---	---	12.0	---	15.0	---	19.0	23.0	---
AVG	---	---	---	---	11.0	11.5	12.5	14.5	16.0	17.5	21.0	24.0

09508300 WET BOTTOM CREEK NEAR CHILDS, ARIZ.

(Hydrologic bench-mark station)

LOCATION.--Lat 34°09'39'', long 111°41'32'', in sec.36, T.9½ N., R.6 E. (unsurveyed), Gila County, at gaging station, 1.4 miles upstream from mouth, and 13 miles south of town of Childs.

DRAINAGE AREA.--37 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: August 1968 to September 1971.
Sediment records: August 1968 to September 1971.

REMARKS.--No flow June 26 to Aug. 2, Aug. 17 to Sept. 29.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)
OCT. 15...	1430	.60	29	--	38	10	25	1.5
DEC. 15...	1430	.60	37	20	37	11	27	1.4
JAN. 15...	1100	1.0	32	80	27	8.0	22	1.0
FEB. 17...	1300	.60	33	120	28	8.8	23	1.1
MAR. 30...	1000	.30	37	30	32	9.3	25	1.5
APR. 23...	0845	.50	38	20	37	12	32	1.9
MAY 19...	1030	.08	38	40	44	12	32	1.3
AUG. 12...	1000	2.1	45	10	39	11	32	2.2

DATE	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 °C) (MG/L)
OCT. 15...	191	5	9.2	10	1.1	--	--	60	220
DEC. 15...	216	0	5.8	11	2.1	.20	.09	30	--
JAN. 15...	152	0	16	8.0	2.0	.20	.02	60	--
FEB. 17...	169	0	11	8.4	2.2	.10	.05	50	--
MAR. 30...	191	0	10	8.0	3.3	.00	.09	30	--
APR. 23...	209	0	9.5	11	2.0	.00	.06	30	--
MAY 19...	241	0	6.3	16	1.6	.00	.09	40	--
AUG. 12...	230	0	17	14	2.4	.10	.06	50	--

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
OCT. 15...	223	.30	136	0	.9	352	8.4	29.0
DEC. 15...	240	.33	140	0	1.0	376	8.4	12.0
JAN. 15...	190	.26	100	0	1.0	284	7.8	6.0
FEB. 17...	200	.27	110	0	1.0	293	7.9	12.0
MAR. 30...	220	.30	120	0	1.0	320	8.2	18.0
APR. 23...	246	.33	140	0	1.2	369	7.9	20.0
MAY 19...	270	.37	160	0	1.1	419	7.8	21.0
AUG. 12...	276	.38	140	0	1.2	402	7.9	27.0

09508300 WET BOTTOM CREEK NEAR CHILDS, ARIZ.--Continued

FIELD DETERMINATIONS OF WATER QUALITY, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	AIR TEMP-ERATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)
JAN. 15...	1100	1.0	290	--	6.0	--	5.6
MAR. 30...	1000	.30	340	7.0	18.0	--	8.0
APR. 23...	0845	.50	380	--	20.0	--	10.0
MAY 19...	1030	.08	420	7.0	21.0	--	8.0
AUG. 12...	0945	2.1	550	7.0	27.0	30.5	5.6

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	ALDRIN (UG/L)	ALDRIN IN BOTTOM DE-POSITS (UG/KG)	CHLOR-DANE (UG/L)	CHLOR-DANE IN BOTTOM DE-POSITS (UG/KG)	DDD (UG/L)	DDD IN BOTTOM DE-POSITS (UG/KG)	DDE (UG/L)	DDE IN BOTTOM DE-POSITS (UG/KG)	DDT (UG/L)	DDT IN BOTTOM DE-POSITS (UG/KG)
NOV. 16...	1145	.00	<.2	.0	<1.0	.00	<.2	.00	<.2	.00	1.1

DATE	DI-AZINON (UG/L)	DI-AZINON IN BOTTOM DE-POSITS (UG/KG)	DI-ELDRIN (UG/L)	DI-ELDRIN IN BOTTOM DE-POSITS (UG/KG)	ENDRIN (UG/L)	ENDRIN IN BOTTOM DE-POSITS (UG/KG)	HEPTA-CHLOR (UG/L)	HEPTA-CHLOR IN BOTTOM DE-POSITS (UG/KG)	HEPTA-CHLOR EPOXIDE (UG/L)	HEPTA-CHLOR EPOXIDE IN BOT-TOM DE-POSITS (UG/KG)	LINDANE (UG/L)
NOV. 16...	.00	<.20	.00	<.2	.00	<.2	.00	<.2	.00	<.2	.00

DATE	LINDANE IN BOTTOM DE-POSITS (UG/KG)	MALA-THION (UG/L)	MALA-THION IN BOTTOM DE-POSITS (UG/KG)	METHYL PARA-THION (UG/L)	METHYL PARA-THION IN BOT-TOM DE-POSITS (UG/KG)	PARA-THION (UG/L)	PARA-THION IN BOTTOM DE-POSITS (UG/KG)	2,4-D (UG/L)	2,4,5-T (UG/L)	SILVEX (UG/L)
NOV. 16...	<.2	.00	<.2	.00	<.2	.00	<.2	.00	.00	.00

09508300 WET BOTTOM CREEK NEAR CHILDS, ARIZ.--Continued

PERIODIC DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	TEMPERATURE (DEG C)	DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
OCT.					
15...	1450	--	.60	1	.00
DEC.					
15...	1430	12.0	.60	0	.00
JAN.					
15...	1145	6.0	1.0	0	.00
FEB.					
17...	1300	12.0	.60	0	.00
MAR.					
30...	1000	18.0	.30	0	.00
APR.					
23...	0845	20.0	.50	0	.00
AUG.					
12...	0945	27.0	2.1	1	.01

09510000 VERDE RIVER BELOW BARTLETT DAM, ARIZ.

(Irrigation network station)

LOCATION.--Lat 33°49'05", long 111°37'53", in sec. 33, T. 6 N., R. 7 E. (unsurveyed), Maricopa County, at Bartlett Dam, 2.1 miles upstream from gaging station, 6.1 miles upstream from Camp Creek, and 18 miles east of town of Cave Creek.

DRAINAGE AREA.--6,188 sq mi (at gaging station).

PERIOD OF RECORD.--Chemical analyses: December 1950 to September 1971.
Water temperatures: December 1950 to September 1971.

EXTREMES.--1970-71:
Specific conductance: Maximum daily, 620 micromhos Sept. 13-15, 19, 27; minimum daily, 450 micromhos Oct. 22, 23.
Water temperatures: Maximum, 25.0°C Sept. 23-25, 27; minimum, 6.0°C Mar. 2, 3.

Period of record:
Specific conductance: Maximum daily, 958 micromhos Nov. 10, 1956; minimum daily, 225 micromhos May 14, 1965.
Water temperatures: Maximum, 32.0°C July 18, Aug. 14, 1951; minimum, 5.0°C Jan. 30, 1952.

REMARKS.--No inflow between sampling point and gaging station except during periods of heavy local rains.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)
OCT. 15...	0800	1070	19	100	39	24	28	3.6	232	0	54	18
NOV. 15...	0800	277	19	80	42	25	27	4.1	236	0	54	17
DEC. 15...	0800	622	21	40	42	28	27	3.7	242	3	52	19
JAN. 15...	0800	70	19	130	44	29	30	3.4	238	0	52	17
FEB. 15...	0800	28	18	220	46	28	30	3.2	262	0	55	18
MAR. 15...	0800	21	18	30	37	28	30	3.7	262	0	50	18
APR. 15...	0800	43	23	10	44	25	32	4.1	262	0	56	20
MAY 15...	0800	35	28	30	46	27	29	3.5	259	0	58	18
JULY 15...	0800	720	18	10	36	30	35	3.6	252	0	62	20
AUG. 15...	0800	1000	20	10	44	29	30	3.5	268	0	56	19
SEP. 15...	0800	1430	20	10	44	33	42	3.6	278	0	76	23

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
OCT. 15...	.4	.40	.14	160	300	.41	200	10	.9	473	8.3
NOV. 15...	.4	.80	.01	170	310	.42	210	16	.8	484	8.2
DEC. 15...	.5	.40	.07	150	310	.42	220	16	.8	510	8.4
JAN. 15...	.5	.30	--	180	313	.43	230	35	.9	530	7.9
FEB. 15...	.4	.10	.10	140	330	.45	230	15	.9	549	8.4
MAR. 15...	.6	.20	.15	180	315	.43	210	0	.9	516	8.3
APR. 15...	.6	.40	.21	180	336	.46	210	0	1.0	543	8.2
MAY 15...	.4	.20	.12	140	338	.46	230	14	.8	543	8.1
JULY 15...	.4	.02	.03	170	329	.45	210	7	1.0	535	6.9
AUG. 15...	.6	.22	.21	210	335	.46	230	9	.9	559	7.9
SEP. 15...	.4	.40	.12	200	381	.52	250	18	1.2	623	7.8

09510000 VERDE RIVER BELOW BARTLETT DAM, ARIZ.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	530	460	540	540	550	540	540	520	560	560	560	560
2	530	460	540	520	550	550	540	540	480	560	560	560
3	530	460	530	--	550	550	540	530	490	560	570	490
4	520	460	520	--	540	540	540	540	480	560	530	550
5	520	460	520	--	540	540	530	550	500	560	570	560
6	520	470	520	520	540	540	530	550	490	560	570	560
7	530	470	520	520	550	530	550	550	550	560	570	560
8	520	480	520	520	540	540	550	550	480	540	570	560
9	530	500	520	520	540	540	540	550	560	560	560	560
10	530	500	520	520	540	540	550	550	560	560	570	560
11	530	510	520	520	540	540	550	550	560	550	560	610
12	530	500	520	520	540	560	550	540	550	550	560	610
13	520	500	520	520	540	560	550	540	560	520	560	620
14	520	500	520	540	540	550	550	540	560	550	570	620
15	510	500	520	540	540	560	550	550	560	560	570	620
16	510	500	520	540	540	550	540	550	560	560	570	550
17	510	500	520	540	540	560	540	550	560	540	560	610
18	510	500	520	540	540	550	540	550	560	540	560	610
19	500	570	520	540	540	550	550	540	560	560	560	620
20	490	560	520	540	540	540	540	550	550	560	570	580
21	490	560	520	530	540	550	540	560	560	560	550	600
22	450	540	520	530	540	540	550	550	560	560	560	610
23	450	540	520	530	540	540	550	550	560	560	560	600
24	460	540	520	530	540	540	550	540	560	560	560	600
25	460	540	530	530	540	560	550	540	560	560	560	600
26	460	530	530	530	540	560	540	540	560	560	560	600
27	460	530	530	530	540	560	550	540	570	560	560	620
28	460	530	540	540	540	560	550	540	560	560	560	590
29	460	530	540	540	--	560	540	550	560	560	560	590
30	460	540	540	540	--	560	540	550	560	560	560	590
31	460	--	540	540	--	560	--	550	--	560	560	--
AVG	500	510	520	530	540	550	540	540	540	560	560	580

09510000 VERDE RIVER BELOW BARTLETT DAM, ARIZ.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.0	18.0	15.0	11.0	8.0	7.0	9.0	13.0	12.0	12.0	14.0	20.0
2	17.0	19.0	14.0	11.0	8.0	6.0	9.0	14.0	12.0	13.0	14.0	18.0
3	16.0	18.0	13.0	--	8.0	6.0	10.0	14.0	12.0	12.0	14.0	18.0
4	16.0	18.0	13.0	--	8.0	7.0	9.0	14.0	12.0	13.0	15.0	18.0
5	16.0	18.0	13.0	--	8.0	7.0	10.0	14.0	12.0	14.0	15.0	19.0
6	16.0	18.0	13.0	9.0	8.0	8.0	9.0	11.0	13.0	15.0	15.0	19.0
7	16.0	18.0	13.0	8.0	9.0	8.0	10.0	10.0	13.0	13.0	15.0	19.0
8	15.0	17.0	13.0	9.0	9.0	8.0	9.0	10.0	12.0	12.0	15.0	18.0
9	15.0	16.0	13.0	9.0	9.0	8.0	9.0	11.0	12.0	12.0	14.0	19.0
10	15.0	16.0	13.0	9.0	9.0	8.0	9.0	12.0	13.0	13.0	15.0	20.0
11	15.0	16.0	14.0	9.0	8.0	9.0	9.0	12.0	12.0	13.0	14.0	22.0
12	16.0	17.0	14.0	9.0	8.0	8.0	9.0	12.0	12.0	13.0	16.0	22.0
13	17.0	17.0	13.0	8.0	8.0	8.0	10.0	12.0	13.0	13.0	15.0	23.0
14	17.0	17.0	13.0	8.0	8.0	8.0	10.0	12.0	12.0	14.0	15.0	24.0
15	17.0	17.0	12.0	8.0	8.0	7.0	12.0	13.0	13.0	13.0	16.0	24.0
16	17.0	17.0	12.0	8.0	9.0	8.0	11.0	13.0	12.0	14.0	16.0	23.0
17	17.0	17.0	12.0	8.0	9.0	8.0	11.0	13.0	12.0	13.0	17.0	24.0
18	17.0	17.0	12.0	8.0	9.0	8.0	11.0	12.0	12.0	14.0	18.0	24.0
19	17.0	17.0	12.0	8.0	9.0	9.0	10.0	12.0	12.0	14.0	17.0	23.0
20	17.0	17.0	12.0	8.0	9.0	9.0	12.0	12.0	11.0	14.0	17.0	23.0
21	16.0	17.0	12.0	8.0	9.0	9.0	11.0	12.0	12.0	14.0	17.0	22.0
22	19.0	17.0	12.0	9.0	8.0	9.0	10.0	12.0	12.0	14.0	17.0	24.0
23	19.0	17.0	11.0	9.0	8.0	9.0	11.0	12.0	12.0	13.0	16.0	25.0
24	19.0	17.0	11.0	10.0	9.0	9.0	11.0	12.0	12.0	14.0	16.0	25.0
25	18.0	17.0	11.0	10.0	8.0	9.0	11.0	12.0	12.0	15.0	16.0	25.0
26	18.0	16.0	11.0	9.0	8.0	9.0	11.0	13.0	12.0	14.0	17.0	24.0
27	18.0	16.0	11.0	10.0	8.0	10.0	11.0	12.0	13.0	14.0	18.0	25.0
28	18.0	16.0	11.0	9.0	7.0	10.0	11.0	12.0	13.0	14.0	19.0	24.0
29	18.0	16.0	11.0	9.0	--	10.0	11.0	12.0	13.0	15.0	19.0	23.0
30	18.0	16.0	11.0	8.0	--	10.0	11.0	11.0	13.0	14.0	19.0	23.0
31	18.0	--	11.0	8.0	--	10.0	--	12.0	--	14.0	20.0	--
AVG	17.0	17.0	12.5	9.0	8.5	8.5	10.0	12.0	12.5	13.5	16.0	22.0

09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, ARIZ.

(Irrigation network and pesticide station)

LOCATION.--Lat 33°13'36'', long 112°46'17'', in SW¼NE¼ sec. 28, T. 2 S., R. 5 W., Maricopa County, Enterprise Canal at gaging station, at bridge on former U.S. Highway 80, 0.2 mile downstream from Gillespie Dam, and 8 miles downstream from Hassayampa River.

DRAINAGE AREA.--49, 650 sq mi.

PERIOD OF RECORD.--Chemical analyses: December 1950 to September 1971 (discontinued).
Water temperatures: December 1950 to February 1968, October 1970 to September 1971 (discontinued).
Prior to October 1967, published as 09519500, Gila River below Gillespie Dam, Ariz.

EXTREMES.--1970-71:
Dissolved solids: Maximum, 5, 600 mg/l Feb. 1-8; minimum, 218 mg/l Aug. 23.
Hardness: Maximum, 1, 600 mg/l Feb. 1-8; minimum, 92 mg/l Aug. 23.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	MEAN DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)
OCT.												
01-10	38	30	--	320	137	--	1160	--	337	0	1120	1690
11-15	43	30	--	280	120	--	989	--	315	0	952	1450
16-27	40	29	--	330	150	1160	--	9.8	349	0	1190	1760
28-31	43	29	--	275	123	--	950	--	317	0	936	1400
NOV.												
01-06	48	30	80	220	120	860	--	12	296	0	880	1200
07-30	54	30	130	260	130	1000	--	13	323	0	1100	1300
DEC.												
01-26	60	29	180	260	140	990	--	11	327	0	990	1600
27-31	42	29	60	310	150	1200	--	12	358	0	1400	1500
JAN.												
01-06	40	30	100	280	140	1000	--	10	334	0	1000	1500
07-11	47	30	180	250	120	880	--	10	307	0	790	1400
12-31	38	28	100	340	160	1200	--	16	357	0	1200	1900
FEB.												
01-08	38	25	80	360	160	1340	--	9.4	365	0	1200	2300
09-28	32	23	130	300	140	1100	--	9.7	348	0	1100	1700
MAR.												
01-19	40	21	20	340	150	1200	--	10	354	0	1300	1800
20-31	54	23	20	330	140	1100	--	10	338	0	1200	1700
APR.												
01-12	44	26	30	320	150	1100	--	10	346	0	1100	1600
13-14	55	29	40	150	51	590	--	6.6	232	0	540	800
15-17	83	29	30	240	100	850	--	8.8	267	12	840	1200
18-30	43	25	20	320	150	1200	--	9.5	354	0	1200	1700
MAY												
01-04	32	27	20	260	120	930	--	8.6	300	0	1000	1400
05...	30	30	20	160	62	600	--	7.9	230	0	550	860
06-24	31	22	10	290	130	1100	--	9.2	293	0	1100	1600
25-31	36	15	10	220	100	750	--	8.8	208	0	850	1200
JUNE												
01-13	30	26	20	260	110	890	--	9.1	289	0	890	1300
14-18	17	24	20	310	140	1100	--	10	307	0	1100	1600
19...	15	29	10	130	48	460	--	5.3	199	0	680	750
20-29	14	21	10	250	110	890	--	9.2	246	0	900	1300
30...	12	27	20	130	57	550	--	5.8	185	0	690	760
JULY												
01-08	12	22	10	210	96	900	--	9.1	193	0	870	1300
09...	13	29	10	130	49	600	--	6.3	191	0	580	780
10-27	15	22	20	210	90	850	--	9.5	214	0	790	1200
28-31	16	13	10	260	120	1100	--	11	197	0	1100	1600
AUG.												
01-03	15	23	10	240	120	930	--	9.2	201	0	1100	1400
04...	21	9.9	20	52	8.4	46	--	10	177	0	54	58
05-16	49	23	0	180	82	620	--	9.6	217	0	690	890
17-22	331	18	20	60	16	150	--	8.7	196	0	140	180
23...	584	12	10	31	3.5	34	--	7.9	155	0	29	20
24-28	834	20	20	43	8.2	120	--	7.2	203	0	110	99
29-31	105	28	10	210	87	630	--	11	302	0	680	1000
SEP.												
01-02	29	27	0	110	37	390	--	8.4	244	0	330	500
03-05	27	30	0	160	67	620	--	7.2	260	0	560	900
06-08	72	20	0	57	15	170	--	6.6	178	0	130	190
09...	45	25	10	110	37	410	--	7.3	230	0	350	540
10-14	23	31	0	260	98	820	--	9.9	288	0	820	1200
15-28	28	28	10	320	140	1100	--	9.7	350	0	1100	1700
29-30	22	26	10	200	89	610	--	12	235	0	640	950
WTD. AVG.	--	24	51	200	89	692	--	9.5	274	0	718	1030
TIME WTD. AVG.	56	25	56	267	122	964	--	10	301	0	985	1440
TOT. LOAD (TONS)	--	1310	3	11000	4880	36600	--	506	15100	8	39500	56700

09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, ARIZ.--Continued

EXTREMES, 1970-71.--Continued

Specific conductance: Maximum daily, 8 450 micromhos Mar. 9; minimum daily, 356 micromhos Aug. 23.

Water temperatures: Maximum, 32.0°C July 24, Aug. 3; minimum, 4.0°C Jan. 5, 7, 8.

Period of record:

Dissolved solids: Maximum, 7,720 mg/l Dec. 1-31, 1962; minimum, 144 mg/l Dec. 26-28, 1967.

Hardness: Maximum, 2,220 mg/l July 1-18, 1966; minimum, 80 mg/l Dec. 26-28, 1967.

Specific conductance: Maximum daily (1950-68, 1970-71), 13,200 micromhos July 10, 11, 1966; minimum daily (1950-68, 1970-71), 236 micromhos Dec. 28, 1967.

Water temperatures: Maximum (1950-66, 1970-71), 36.5°C July 8, 1958, July 22, 1959, Aug. 5, 8, 1966; minimum (1950-65, 1968, 1970-71), 1.5°C Jan. 1, 1951.

REMARKS.--Samples from Enterprise Canal are believed to be representative of total flow passing Gillespie Dam, including spill into Gila River and flow diverted into Gila Bend Canal.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
OCT.											
01-10	--	14	--	3400	4690	6.38	1360	1080	14	7010	8.0
11-15	--	13	--	2900	4030	5.48	1190	932	12	6180	7.8
16-27	2.8	14	--	3600	4870	6.64	1440	1150	13	7410	8.0
28-31	--	13	--	2900	3930	5.34	1190	930	12	6080	7.7
NOV.											
01-06	2.2	25	7.5	2400	3500	4.76	1000	757	12	5500	7.8
07-30	2.6	23	6.3	3700	4000	5.44	1200	935	13	6560	7.9
DEC.											
01-26	2.5	25	5.9	3500	4200	5.71	1200	932	12	6490	7.8
27-31	2.8	21	3.1	4100	5000	6.80	1400	1110	14	7490	7.9
JAN.											
01-06	2.3	22	.05	2900	4200	5.71	1300	1030	12	6740	8.1
07-11	2.1	23	2.2	2400	3700	5.03	1100	848	12	5720	7.8
12-31	3.1	21	6.0	3700	5100	6.94	1500	1210	13	7690	8.0
FEB.											
01-08	3.4	.60	2.4	4000	5600	7.62	1600	1300	15	8050	8.5
09-28	1.5	1.6	4.5	3300	4600	6.26	1300	1020	13	7150	8.3
MAR.											
01-19	2.5	.80	1.8	3100	5010	6.81	1500	1200	14	7880	8.2
20-31	2.4	4.2	2.1	2900	4700	6.39	1400	1100	13	7300	8.1
APR.											
01-12	2.7	15	2.1	3600	4550	6.19	1400	1100	13	7260	8.5
13-14	4.5	11	1.2	3000	2340	3.18	580	390	11	3850	8.3
15-17	3.4	14	1.9	3600	3480	4.73	1000	770	12	5540	8.4
18-30	2.7	16	1.8	3100	4860	6.61	1400	1100	14	7500	8.5
MAY											
01-04	4.5	14	1.4	3200	3960	5.39	1100	900	12	6410	8.3
05...	6.0	13	1.3	2000	2450	3.33	650	470	10	3950	8.3
06-24	3.0	16	1.2	3300	4470	6.08	1300	1000	13	6700	8.1
25-31	3.0	13	1.7	2600	3310	4.50	960	790	11	5310	7.9
JUNE											
01-13	2.4	15	2.5	2900	3700	5.03	1100	860	12	5820	8.2
14-18	2.2	15	2.1	3600	4510	6.13	1400	1100	13	7010	8.0
19...	1.8	10	1.1	1700	2250	3.06	520	360	8.8	3290	7.8
20-29	2.6	14	1.7	3200	3670	4.99	1100	870	12	5820	7.7
30...	5.0	10	.92	1800	2360	3.21	560	410	10	3580	7.8
JULY											
01-08	3.5	12	1.2	5400	3570	4.86	920	760	13	5400	7.5
09...	4.6	9.2	1.1	4100	2320	3.16	530	370	11	3620	7.6
10-27	3.3	10	.92	5300	3330	4.53	890	720	12	5130	7.7
28-31	2.1	9.2	.80	6600	4350	5.92	1100	980	14	6580	7.4
AUG.											
01-03	2.6	13	.86	7300	3990	5.43	1100	930	12	6160	7.7
04...	.7	1.6	.74	240	334	.45	160	19	1.6	565	7.5
05-16	2.8	10	1.4	2100	2650	3.60	790	610	9.6	4240	7.7
17-22	1.0	2.8	1.6	570	685	.93	220	55	4.4	1200	7.6
23...	.6	.74	.55	170	218	.30	92	0	1.5	355	7.6
24-28	1.2	1.9	1.0	400	518	.70	140	0	4.4	862	7.6
29-31	1.9	9.5	2.7	1900	2840	3.86	880	630	9.2	4650	7.6
SEP.											
01-02	3.9	7.1	1.1	1300	1560	2.12	430	230	8.2	2590	7.9
03-05	5.2	9.8	1.1	1900	2520	3.43	670	460	10	4120	8.0
06-08	1.1	4.0	1.9	450	697	.95	200	58	5.2	1200	7.7
09...	4.0	7.0	1.5	1200	1630	2.22	430	240	8.6	2710	7.8
10-14	2.8	16	2.2	2500	3460	4.71	1100	820	11	5420	8.0
15-28	2.7	14	2.2	3400	4640	6.31	1400	1100	13	7210	7.9
29-30	1.9	8.3	3.1	2200	2690	3.66	870	670	9.0	4450	7.4
WTD. AVG.	2.1	10	2.6	2310	2950	4.01	864	641	9.7	4620	7.9
TIME WTD. AVG.	2.7	13	2.9	3300	4020	5.47	1170	919	12	6240	8.0
TOT. LOAD (TONS)	112	574	132	127	162000	--	--	--	--	--	--

09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, ARIZ.--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	ALDRIN (UG/L)	CHLOR-DANE (UG/L)	DDD (UG/L)	DDE (UG/L)	DDT (UG/L)	DI-AZINON (UG/L)	DI-ELDRIN (UG/L)	ENDRIN (UG/L)
OCT. 01...	1210	--	.00	.0	.00	.01	.00	.00	.00	.00
NOV. 02...	1230	--	.00	.0	.00	.02	.00	.10	.00	--
DEC. 02...	1500	--	.00	.0	.00	.01	.00	.00	.00	.00
JAN. 08...	1600	--	.00	.0	.00	.05	.02	--	.01	.00
FEB. 01...	1030	--	.00	.0	.00	.01	.00	.00	.01	.00
APR. 06...	1245	--	.00	.0	.02	.08	.00	.00	.00	.00
MAY 07...	1030	--	.00	.0	.00	.02	.00	.01	.00	.00
JUNE 01...	1200	--	.00	.0	.00	.02	.00	.04	.00	.00
JULY 01...	1130	1.3	.00	.0	.00	.02	.00	.00	.00	.00
AUG. 18...	1030	--	.00	.0	.00	.00	.00	.00	.00	.00
SEP. 01...	1640	--	.00	.0	.00	.03	.05	.00	.00	.00

DATE	HEPTA-CHLOR (UG/L)	HEPTA-CHLOR EPOXIDE (UG/L)	LINDANE (UG/L)	MALA-THION (UG/L)	METHYL PARA-THION (UG/L)	PARA-THION (UG/L)	2,4-D (UG/L)	2,4,5-T (UG/L)	SILVEX (UG/L)
OCT. 01...	--	--	.01	.00	.02	.04	.00	.00	.00
NOV. 02...	--	.00	.00	.00	.10	.00	.00	.00	.00
DEC. 02...	.00	.00	.06	.00	.00	.00	.00	.00	.00
JAN. 08...	.00	.00	.05	.00	.00	.00	.00	.00	.00
FEB. 01...	.00	.00	.01	.00	.00	.00	.00	.00	.00
APR. 06...	.00	.00	.01	.00	.00	.00	.00	.00	.00
MAY 07...	.00	.00	.00	.00	.00	.00	.00	.00	.00
JUNE 01...	.00	.00	.00	.00	.00	.00	.00	.00	.00
JULY 01...	.00	.00	.00	.00	.00	.00	.00	.00	.00
AUG. 18...	.00	.00	.00	.00	.00	.00	.00	.00	.01
SEP. 01...	.00	.00	.00	.00	.00	.00	.00	.00	.00

09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, ARIZ.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7090	--	5750	--	8310	7730	7290	7290	4860	4330	--	2240
2	7040	5760	5820	6840	8270	7590	7240	--	6100	5920	4400	2770
3	7120	5290	6950	--	7960	7240	7050	6060	5790	5350	7540	3640
4	--	5410	6720	6720	8040	7890	--	5380	6200	--	553	4370
5	7560	5410	6110	5890	7870	7770	7610	3880	6870	--	3980	--
6	6990	5620	--	6740	7680	7550	6110	7160	--	6160	5100	--
7	6850	6610	6370	5910	--	--	7720	7360	5570	5890	5650	1390
8	6920	--	6490	5490	7310	7660	7190	7380	4700	5280	--	952
9	6690	6260	6780	5870	6410	8450	7140	--	4520	3700	4000	2630
10	7110	6260	6670	--	6740	8010	7310	5050	5200	5830	3780	4410
11	--	6800	6590	5130	7050	8190	--	7080	6280	--	4140	6250
12	5830	7210	6630	6570	7200	8070	6000	6310	6240	4320	3730	--
13	6100	6720	--	7000	7460	7660	3180	7570	--	4460	5310	4870
14	7080	7120	6740	7650	--	--	4340	5670	7050	6250	3030	5460
15	5810	--	6200	7960	--	8010	5000	5330	7460	5380	--	7690
16	7570	6760	6320	8010	6520	8010	5500	--	5990	6210	2690	7570
17	7170	6610	7230	--	6990	7750	5650	7240	7300	6590	1210	7320
18	--	5950	6320	7630	7100	7220	--	5250	6520	--	1410	6710
19	7020	6500	6490	7440	7230	7840	6360	7630	3220	4320	932	--
20	7220	6540	--	7360	6600	7160	6690	6970	--	4470	1200	7420
21	7540	6610	6250	7700	--	--	7570	4730	5020	5150	--	6910
22	7620	--	5820	7000	6640	6970	7760	6970	6540	4070	--	6220
23	7530	6560	6220	6900	7170	7250	7760	--	5360	4540	356	7090
24	7490	5620	6230	--	6940	7110	7760	7260	5340	6180	788	6830
25	--	7120	--	7680	7360	7300	--	4540	5480	--	945	8040
26	7560	--	6610	7930	6850	7250	7590	4350	5710	5830	831	--
27	7360	6260	--	7580	7460	7680	6050	6040	--	4040	725	6080
28	5970	5810	7170	7320	--	--	7430	5800	5780	6450	932	5860
29	6130	--	7730	7100	--	6410	7540	5150	6220	6560	--	5140
30	6240	6560	7340	7760	--	7500	7610	--	3490	6560	4430	3410
31	6050	--	7300	--	--	7200	--	--	--	6970	4620	--
AVG	6910	6310	6570	7010	7270	7570	6710	6140	5720	5420	2780	5250

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28.0	--	14.0	--	13.0	12.0	18.0	21.0	24.0	29.0	--	28.0
2	28.0	15.0	13.0	10.0	13.0	10.0	17.0	--	23.0	30.0	30.0	25.0
3	29.0	16.0	12.0	--	14.0	10.0	18.0	21.0	20.0	29.0	32.0	25.0
4	--	7.0	11.0	6.0	10.0	12.0	--	23.0	22.0	--	26.0	25.0
5	25.0	17.0	10.0	4.0	10.0	14.0	18.0	27.0	23.0	--	30.0	--
6	28.0	15.0	--	5.0	10.0	12.0	19.0	19.0	--	29.0	30.0	--
7	29.0	15.0	11.0	4.0	--	--	19.0	18.0	24.0	28.0	30.0	28.0
8	13.0	--	11.0	4.0	12.0	14.0	19.0	19.0	25.0	28.0	--	29.0
9	14.0	14.0	11.0	5.0	12.0	15.0	19.0	--	25.0	29.0	30.0	30.0
10	19.0	14.0	12.0	--	11.0	15.0	19.0	23.0	26.0	29.0	30.0	30.0
11	--	14.0	11.0	7.0	12.0	16.0	--	22.0	25.0	--	28.0	30.0
12	17.0	14.0	10.0	8.0	14.0	16.0	22.0	24.0	26.0	29.0	30.0	--
13	14.0	15.0	--	9.0	14.0	17.0	23.0	23.0	--	29.0	29.0	28.0
14	18.0	15.0	11.0	10.0	--	--	23.0	25.0	27.0	30.0	30.0	27.0
15	18.0	--	10.0	10.0	--	15.0	19.0	25.0	28.0	30.0	--	27.0
16	20.0	14.0	10.0	11.0	15.0	16.0	18.0	--	28.0	29.0	30.0	28.0
17	19.0	13.0	10.0	--	15.0	17.0	20.0	23.0	28.0	27.0	30.0	27.0
18	--	13.0	12.0	13.0	14.0	16.0	--	22.0	27.0	--	30.0	25.0
19	19.0	13.0	12.0	14.0	14.0	16.0	16.0	21.0	29.0	28.0	30.0	--
20	19.0	12.0	--	15.0	14.0	15.0	15.0	21.0	--	28.0	30.0	21.0
21	19.0	13.0	12.0	15.0	--	--	13.0	23.0	29.0	29.0	--	21.0
22	20.0	--	11.0	15.0	12.0	17.0	16.0	20.0	29.0	29.0	--	25.0
23	18.0	12.0	11.0	14.0	13.0	18.0	19.0	--	29.0	30.0	30.0	23.0
24	18.0	13.0	10.0	--	13.0	19.0	19.0	23.0	28.0	32.0	30.0	24.0
25	--	13.0	--	13.0	14.0	18.0	--	25.0	27.0	--	30.0	22.0
26	16.0	--	12.0	11.0	14.0	19.0	17.0	25.0	27.0	31.0	30.0	--
27	16.0	15.0	--	12.0	12.0	20.0	18.0	23.0	--	31.0	30.0	22.0
28	14.0	14.0	14.0	13.0	--	--	19.0	22.0	26.0	31.0	30.0	23.0
29	13.0	--	13.0	13.0	--	20.0	20.0	20.0	26.0	31.0	--	23.0
30	14.0	15.0	11.0	13.0	--	20.0	20.0	--	26.0	31.0	30.0	22.0
31	15.0	--	11.0	--	--	--	--	--	--	30.0	30.0	--
AVG	19.0	14.0	11.5	10.0	13.0	15.5	19.0	22.5	26.0	29.5	30.0	25.5

09520700 GILA RIVER NEAR MOUTH, NEAR YUMA, ARIZ.

LOCATION.--Lat 32°42'45", long 114°33'09", in SW¼SE¼ sec.19, T.8 S., R.22 W., Yuma County, 0.5 mile upstream from mouth, and 5 miles east of Yuma.

DRAINAGE AREA.--58,000 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1971.

REMARKS.--Unpublished chemical analyses (continuing record) for water years 1962-68 available from district office in Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)
OCT.									
09...	--	--	22	--	143	57	--	401	--
29...	--	--	20	--	151	57	--	440	--
NOV.									
06...	--	--	20	--	151	57	--	433	--
12...	--	--	20	--	171	67	--	487	--
DEC.									
03...	--	--	21	--	160	71	--	470	--
17...	--	--	24	--	161	70	--	500	--
31...	--	--	23	--	171	69	--	495	--
JAN.									
13...	--	--	27	140	150	57	460	--	7.4
FEB.									
03...	1250	--	26	100	140	52	440	--	7.1
17...	--	--	23	--	178	67	--	479	--
MAR.									
03...	1300	--	30	100	160	72	460	--	8.1
24...	--	--	20	--	181	75	--	547	--
APR.									
07...	1400	430	28	20	240	92	750	--	8.8
21...	--	--	21	--	194	82	--	559	--
MAY									
05...	1330	56	30	10	150	59	540	--	7.6
JUNE									
02...	--	73	17	20	140	54	460	--	6.6
16...	--	--	22	--	142	52	--	445	--
JULY									
07...	1300	115	28	10	170	72	480	--	7.0
21...	--	--	21	--	179	70	--	513	--
AUG.									
04...	1400	131	27	10	190	80	620	--	7.1
18...	--	--	22	--	189	73	--	546	--
SEP.									
08...	1045	87	27	10	150	60	470	--	6.6
22...	--	--	19	--	152	59	--	450	--

09520700 GILA RIVER NEAR MOUTH, NEAR YUMA, ARIZ.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED ORTHO PHOS- PHATE (PO4) (MG/L)	DIS- SOLVED BORON (B) (UG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180°C) (MG/L)
OCT.									
09...	284	0	510	495	--	--	--	--	1940
29...	300	0	530	545	--	--	--	--	2030
NOV.									
06...	296	0	520	545	--	--	--	--	2030
12...	302	0	510	695	--	--	--	--	2220
DEC.									
03...	280	0	510	675	--	--	--	--	2140
17...	260	0	500	740	--	--	--	--	2230
31...	280	0	480	750	--	--	--	--	2250
JAN.									
13...	298	0	590	510	.9	1.7	--	740	2040
FEB.									
03...	296	0	430	560	1.0	1.8	8.5	770	2000
17...	292	0	460	740	--	--	--	--	2190
MAR.									
03...	298	0	420	770	.8	.10	.10	650	2180
24...	282	0	500	850	--	--	--	--	2530
APR.									
07...	347	0	750	1100	1.9	.80	--	1300	3160
21...	308	0	510	888	--	--	--	--	2630
MAY									
05...	284	0	600	620	1.1	.90	--	670	2030
JUNE									
02...	288	0	530	580	.8	.90	--	720	1980
16...	278	0	495	564	--	--	--	--	1960
JULY									
07...	299	0	450	790	.8	.63	--	710	2280
21...	276	0	480	797	--	--	--	--	2490
AUG.									
04...	314	0	480	940	.8	.86	--	690	2640
18...	302		505	840	--	--	--	--	2610
SEP.									
08...	313	0	480	700	1.2	.92	--	780	--
22...	282		460	631	--	--	--	--	2120

09520700 GILA RIVER NEAR MOUTH, NEAR YUMA, ARIZ.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
OCT.								
09...	1770	2.64	590	357	7.2	2980	8.0	--
29...	1890	2.76	610	364	7.7	3150	8.1	--
NOV.								
06...	1870	2.76	610	368	7.6	3160	8.0	--
12...	2100	3.02	700	452	8.0	3520	8.0	--
DEC.								
03...	2050	2.91	690	460	7.8	3450	8.1	--
17...	2120	3.03	690	477	8.3	3580	8.1	--
31...	2130	3.06	710	480	8.1	3600	8.0	--
JAN.								
13...	2000	2.77	610	366	8.1	3080	8.3	--
FEB.								
03...	1800	2.72	560	317	8.1	3100	7.9	14.5
17...	2090	2.98	720	480	7.8	3590	8.0	--
MAR.								
03...	2100	2.96	700	456	7.6	3500	8.1	22.0
24...	2310	3.44	760	529	8.6	4010	8.1	--
APR.								
07...	3150	4.30	980	690	10	4910	7.9	24.0
21...	2410	3.58	820	568	8.5	4130	8.0	--
MAY								
05...	2150	2.76	620	380	9.5	3180	7.7	24.0
JUNE								
02...	1930	2.69	570	340	8.4	3080	8.0	25.0
16...	1860	2.67	570	342	8.1	3100	8.1	--
JULY								
07...	2150	3.10	720	480	7.8	3470	8.0	26.0
21...	2200	3.39	735	508	8.2	3840	8.0	--
AUG.								
04...	2500	3.59	800	550	9.5	4030	7.9	23.0
18...	2330	3.55	770	522	8.5	4010	8.0	--
SEP.								
08...	2050	2.79	620	360	8.2	3350	7.9	25.5
22...	1910	2.88	620	389	7.8	3350	8.0	--

09520700 GILA RIVER NEAR MOUTH, NEAR YUMA, ARIZ.--Continued

FIELD DETERMINATIONS OF WATER QUALITY, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	AIR TEMP-ERATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)
OCT.							
22...	1500	51	2800	8.0	--	27.5	--
NOV.							
27...	1230	66	1900	8.1	18.5	20.5	8.3
DEC.							
21...	1500	104	3200	7.7	21.0	15.0	6.7
JAN.							
14...	1355	60	3800	8.0	22.0	17.0	8.8
FEB.							
10...	1115	45	3050	8.1	21.5	20.5	9.7
MAR.							
08...	1115	130	3400	7.9	22.0	22.0	8.4
APR.							
21...	1355	410	3450	7.9	24.0	22.0	8.1
MAY							
12...	1600	55	2270	8.1	23.0	28.0	8.3
JUNE							
16...	1100	40	2630	7.8	26.0	38.0	8.1
JULY							
22...	1555	128	4120	7.9	27.0	38.0	7.4
AUG.							
18...	1040	130	4090	7.8	25.0	32.0	8.0
SEP.							
23...	1330	70	3010	7.9	26.0	34.0	8.1

09522000 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY, ABOVE MORELOS DAM, NEAR ANDRADE, CALIF.

LOCATION.--Lat 32°43'07", long 114°43'05", in NE¼SE¼ sec.21, T.8 S., R.24 W., Gila and Salt River meridian, Yuma County, Ariz., at northerly international boundary, 0.5 mile east of Andrade, 1.1 miles upstream from Morelos Dam, 1.1 miles downstream from Rockwood Gate, 20.7 miles upstream from southerly international boundary, and 21 miles downstream from Laguna Dam.

DRAINAGE AREA.--243,000 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1971.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)	BICAR-BONATE (HCO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)
OCT.								
05...	14	114	38	203	214	410	198	1160
12...	16	111	40	202	212	410	198	1180
19...	12	116	37	201	210	405	202	1130
26...	15	118	38	210	216	420	208	1200
NOV.								
02...	13	116	37	206	216	410	202	1120
09...	13	118	40	223	220	420	232	1220
16...	15	117	41	219	220	415	230	1210
23...	14	118	43	217	220	420	230	1210
30...	14	122	40	231	228	430	240	1290
DEC.								
07...	14	122	43	225	230	425	240	1270
14...	12	117	43	246	208	450	260	1290
21...	12	117	46	246	210	445	270	1310
28...	12	122	45	267	216	465	290	1370
JAN.								
04...	12	125	43	270	216	465	295	1380
11...	13	118	43	237	212	425	262	1280
18...	13	111	42	212	216	420	210	1180
25...	12	114	40	205	218	415	202	1160
FEB.								
01...	12	116	39	197	214	405	200	1150
08...	12	118	43	242	212	435	262	1310
16...	11	118	41	227	208	415	252	1270
22...	13	118	43	236	214	440	248	1290
MAR.								
01...	11	122	44	247	220	440	272	1360
08...	11	115	43	229	208	420	252	1280
15...	11	118	43	214	204	415	238	1230
22...	12	118	40	230	202	425	250	1280
29...	12	118	41	238	208	435	255	1310
APR.								
05...	9.0	113	43	200	196	405	222	1210
12...	10	114	43	203	198	410	222	1200
19...	11	118	40	216	204	420	230	1220
26...	10	121	43	250	210	450	272	1330
MAY								
03...	11	121	43	234	220	450	242	1300
10...	12	122	44	239	220	450	252	1340
17...	10	118	45	239	216	455	248	1320
24...	10	123	42	247	218	455	258	1340
JUNE								
01...	11	122	43	229	214	435	248	1300
07...	12	118	43	239	216	445	248	1320
14...	13	119	43	233	214	440	248	1310
21...	11	110	39	196	196	400	202	1150
28...	12	118	43	236	208	435	255	1300
JULY								
06...	12	116	43	223	204	420	245	1260
12...	12	116	41	242	200	440	258	1280
19...	11	111	40	211	196	405	225	1150
26...	12	118	43	237	200	435	262	1290
AUG.								
02...	12	116	44	241	204	435	265	1300
09...	13	116	43	242	202	430	268	1300
16...	12	119	42	252	204	440	278	1320
23...	11	108	34	184	188	385	182	1080
30...	13	114	41	231	206	430	242	1260
SEP.								
07...	12	119	42	256	212	450	272	1380
13...	13	114	43	225	204	430	238	1280
20...	15	119	43	231	228	420	250	1270
27...	14	119	43	230	226	425	246	1280

09522000 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY, ABOVE MORELOS DAM, NEAR ANDRADE, CALIF.--Continued

EXTREMES.--1970-71:
Specific conductance: Maximum, 2,150 micromhos Jan. 4; minimum, 1,490 micromhos Aug. 29.

Period of record:
Specific conductance (1969-71): Maximum, 2,230 micromhos Dec. 9, 1969, minimum, 1,360 micromhos Mar. 4, 1970.

REMARKS.--Unpublished chemical analyses (continuing record) for water years 1962-68 available from district office in Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
OCT.							
05...	1080	1.58	440	264	4.2	1730	8.1
12...	1080	1.60	440	266	4.2	1730	8.1
19...	1080	1.54	440	268	4.2	1730	8.1
26...	1120	1.63	450	273	4.3	1780	8.1
NOV.							
02...	1090	1.52	440	263	4.3	1750	8.1
09...	1160	1.66	460	280	4.5	1860	8.1
16...	1150	1.65	460	280	4.4	1820	8.2
23...	1150	1.65	470	290	4.3	1840	8.1
30...	1190	1.75	470	283	4.6	1920	8.1
DEC.							
07...	1180	1.73	480	292	4.5	1940	8.1
14...	1230	1.75	470	300	4.9	1990	8.2
21...	1240	1.78	480	308	4.9	2030	8.1
28...	1310	1.86	490	313	5.2	2120	8.1
JAN.							
04...	1320	1.88	490	313	5.3	2150	8.2
11...	1200	1.74	470	296	4.7	1970	8.1
18...	1120	1.60	450	273	4.3	1780	8.1
25...	1100	1.58	450	271	4.2	1750	8.1
FEB.							
01...	1080	1.56	450	274	4.0	1750	8.1
08...	1220	1.78	470	296	4.8	2000	8.1
16...	1170	1.73	465	294	4.6	1940	8.2
22...	1200	1.75	470	294	4.7	1960	8.1
MAR.							
01...	1250	1.85	485	304	4.9	2050	8.2
08...	1170	1.74	465	294	4.6	1960	8.3
15...	1140	1.67	470	302	4.3	1900	8.2
22...	1180	1.74	460	294	4.7	1920	8.2
29...	1200	1.78	465	294	4.8	1960	8.2
APR.							
05...	1090	1.65	460	300	4.1	1810	8.2
12...	1100	1.63	460	298	4.1	1820	8.2
19...	1140	1.66	460	292	4.4	1880	8.2
26...	1250	1.81	480	308	--	2020	8.1
MAY							
03...	1210	1.77	480	300	4.7	1950	8.1
10...	1230	1.82	485	304	4.7	1980	8.1
17...	1220	1.80	480	303	4.7	1980	8.2
24...	1240	1.82	480	301	4.9	2010	8.2
JUNE							
01...	1190	1.77	480	304	4.5	1960	8.1
07...	1210	1.80	470	293	4.8	1970	8.2
14...	1200	1.78	475	300	4.7	1970	8.2
21...	1060	1.56	435	274	4.1	1740	8.2
28...	1200	1.77	470	300	4.7	1960	8.2
JULY							
06...	1160	1.71	465	298	4.5	1900	8.2
12...	1210	1.74	460	296	4.9	1960	8.2
19...	1100	1.56	440	280	4.4	1790	8.2
26...	1210	1.75	470	306	4.7	1970	8.2
AUG.							
02...	1220	1.77	470	302	4.8	1990	8.1
09...	1210	1.77	465	300	4.9	1980	8.2
16...	1240	1.80	470	302	5.1	2020	8.1
23...	998	1.47	410	256	4.0	1620	8.1
30...	1170	1.71	455	286	4.7	1910	8.2
SEP.							
07...	1260	1.88	470	296	5.1	2050	8.0
13...	1160	1.74	460	292	4.6	1900	8.1
20...	1190	1.73	475	288	4.6	1940	8.1
27...	1190	1.74	475	290	4.6	1930	8.0

09522000 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY, ABOVE MORELOS DAM, NEAR ANDRADE, CALIF.--Continued

FIELD DETERMINATIONS OF WATER QUALITY, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	AIR TEMP-ERATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)
OCT.							
22...	0800	700	--	8.1	19.0	17.5	8.4
NOV.							
24...	0800	--	--	--	--	--	--
27...	0830	824	1500	8.1	15.0	15.5	8.5
DEC.							
15...	0800	--	--	--	--	--	--
22...	0800	2110	2300	--	7.0	7.0	--
JAN.							
14...	0815	740	1450	8.0	9.0	4.0	11.5
FEB.							
09...	0900	--	--	--	--	--	--
10...	0840	1460	1570	8.2	12.0	13.0	10.3
MAR.							
08...	0820	2940	1680	8.4	14.0	9.5	10.8
11...	0845	--	--	--	--	--	--
APR.							
20...	0840	--	--	--	--	--	--
21...	0815	2860	1780	8.3	18.0	15.0	9.7
MAY							
11...	1300	--	--	--	--	--	--
12...	0815	1200	1920	8.1	23.0	26.0	7.7
JUNE							
15...	0830	--	--	--	--	--	--
15...	1300	--	--	--	--	--	--
16...	0850	2080	1970	8.0	25.5	27.0	7.9
JULY							
21...	0800	--	--	--	--	--	--
22...	0820	3000	1940	8.2	28.5	27.0	7.4
AUG.							
17...	0800	--	--	--	--	--	--
18...	0750	2780	2040	8.2	28.0	28.0	7.6
SEP.							
21...	0800	--	--	--	--	--	--
23...	0805	200	1900	8.0	21.0	26.0	7.8

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	ALDRIN (UG/L)	CHLOR-DANE (UG/L)	DDD (UG/L)	DDE (UG/L)	DDT (UG/L)	DI-AZINON (UG/L)	DI-ELDRIN (UG/L)	ENDRIN (UG/L)
FEB.										
10...	0840	1460	.00	.0	.00	.00	.00	.00	.00	.00
APR.										
21...	0815	2860	.00	.0	.00	.00	.00	.00	.00	.00
JULY										
22...	0820	3000	.00	.0	.00	.00	.00	--	.00	.00

DATE	HEPTA-CHLOR (UG/L)	HEPTA-CHLOR EPOXIDE (UG/L)	LINDANE (UG/L)	MALA-THION (UG/L)	METHYL PARA-THION (UG/L)	PARA-THION (UG/L)	2,4-D (UG/L)	2,4,5-T (UG/L)	SILVEX (UG/L)
FEB.									
10...	.00	.00	.00	.00	.00	.00	.00	.00	.00
APR.									
21...	.00	.00	.00	.00	.00	.00	.26	.00	.00
JULY									
22...	.00	.00	.00	--	--	--	.00	.00	.00

09522000 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY, ABOVE MORELOS DAM, NEAR ANDRADE, CALIF.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1730	1720	1920	1950	1750	2050	1810	1940	1960	1900	1960	1980
2	1740	1750	1950	1950	1770	2030	1870	1880	1950	1910	1990	1980
3	1710	1770	1950	1980	1750	1980	1860	1950	1970	1830	1990	1990
4	1700	1780	1980	2150	2040	1970	1770	1950	1890	1900	1980	1900
5	1730	1760	1970	2070	2020	2000	1810	2000	1860	1900	1990	1900
6	1730	1740	1950	2090	1890	1980	1850	1970	1960	1900	1990	1930
7	1700	1820	1940	1970	1830	1940	1810	2000	1970	1930	1910	2050
8	1700	1820	1980	1990	2000	1960	1830	1950	1940	1910	1810	1980
9	1700	1860	2040	1770	1960	1990	1810	1930	1960	1900	1980	1940
10	1700	1860	2030	1900	1820	1980	1820	1980	1930	1910	1990	1950
11	1720	1860	2040	1970	1760	1930	1860	1910	1940	1840	1970	1820
12	1730	1870	1770	1760	1770	1970	1820	1930	1880	1960	1960	1840
13	1740	1870	1690	1720	1680	1920	1800	1920	1930	1710	1930	1900
14	1750	1840	1990	1700	1900	1950	1780	1950	1970	1740	1780	1880
15	1720	1820	1980	1730	1980	1900	1830	1830	1970	1750	1940	1910
16	1680	1820	1960	1760	1940	1880	1840	1930	2020	1740	2020	1780
17	1700	1890	1940	1750	1930	1960	1890	1980	1990	1740	2030	1820
18	1730	1910	1900	1780	1990	1910	1900	1970	1970	1730	1960	1920
19	1730	1920	1730	1780	2020	1860	1880	1960	2000	1790	1790	1910
20	1740	1900	1760	1790	1810	1860	1860	2010	1940	1920	1790	1940
21	1770	1830	2030	1770	1760	1900	1920	2010	1740	1950	1660	1920
22	1710	1840	2010	1780	1960	1920	1920	1930	2030	2000	1650	1930
23	1710	1840	2000	1780	1950	1870	1930	1950	1950	2000	1620	1940
24	1720	1850	2020	1740	2050	1840	1950	2010	1930	1930	1620	1900
25	1770	1840	1920	1750	2070	1840	2010	1950	1900	1940	1560	1950
26	1780	1830	1930	1780	2100	1870	2020	1940	1840	1970	1580	1940
27	1750	1800	2030	1770	1830	1930	1920	1920	1940	2000	1590	1930
28	1750	1840	2120	1720	1870	1880	1820	1940	1960	2000	1550	1860
29	1760	1880	2070	1740	---	1960	1820	1940	1910	2040	1490	1880
30	1710	1920	2070	1740	---	1930	1860	1900	1920	2010	1910	1390
31	1740	---	2070	1740	---	1840	---	1910	---	1990	1920	---
AVG	1730	1840	1960	1830	1900	1930	1860	1950	1940	1890	1840	1900

09522200 COLORADO RIVER AT SOUTHERLY INTERNATIONAL BOUNDARY, NEAR SAN LUIS, ARIZ.

LOCATION.--Lat 32°29'48", long 114°48'48", at gaging station in Mexico, 0.2 mile upstream from southerly international boundary, 2 miles west of San Luis, Ariz., 19.4 miles downstream from Morelos Dam, and 20.5 miles downstream from northerly international boundary.

DRAINAGE AREA.--243,000 sq mi, approximately.

PERIOD OF RECORD.--October 1968 to September 1971.

REMARKS.--Unpublished chemical analyses (continuing record) for water years 1962-68 available from district office in Tucson, Ariz. No flow Apr. 10, 11, 14, 22-29, June 24 to July 13, July 26 to Aug. 19.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)
OCT.									
30...	--	--	20	--	258	111	--	1020	--
NOV.									
20...	--	--	22	--	260	120	--	1050	--
DEC.									
18...	--	--	21	--	242	106	--	932	--
JAN.									
08...	--	--	27	80	230	92	860	--	10
FEB.									
02...	1030	--	28	100	260	120	1100	--	11
MAR.									
02...	1040	26	18	100	150	62	360	--	7.5
APR.									
07...	0915	--	16	30	140	47	200	--	6.0
20...	--	--	13	--	135	54	--	243	--
30...	--	--	16	--	150	57	--	271	--
MAY									
04...	1025	78	29	80	200	88	800	--	10
11...	--	--	20	--	192	85	--	681	--
18...	--	--	20	--	190	87	--	670	--
JUNE									
01...	1240	93	25	20	200	85	740	--	9.5
22...	--	--	22	--	206	91	--	778	--
JULY									
23...	0955	6.9	23	10	170	84	680	--	6.7
SEP.									
07...	1205	48	27	20	180	81	630	--	7.9

DATE	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)
OCT.									
30...	328	--	960	1460	--	--	--	--	4260
NOV.									
20...	334	--	1000	1500	--	--	--	--	4460
DEC.									
18...	316	--	950	1290	--	--	--	--	3940
JAN.									
08...	304	0	960	1200	1.8	2.6	--	1100	3630
FEB.									
02...	335	0	950	1500	2.1	2.4	9.8	2200	4500
MAR.									
02...	245	0	560	440	.8	.10	.10	590	1810
APR.									
07...	247	--	440	230	.7	.00	--	260	1240
20...	208	--	500	282	--	--	--	--	1430
30...	248	--	510	300	--	--	--	--	1550
MAY									
04...	302	--	920	950	1.9	2.0	--	1100	3030
11...	296	--	820	862	--	--	--	--	3070
18...	304	--	790	862	--	--	--	--	3020
JUNE									
01...	304	0	900	980	1.8	1.7	--	530	3100
22...	294	--	910	988	--	--	--	--	3360
JULY									
23...	213	0	760	1000	1.4	.27	--	1100	2870
SEP.									
07...	285	0	790	820	1.5	1.7	--	1100	2750

09522200 COLORADO RIVER AT SOUTHERLY INTERNATIONAL BOUNDARY, NEAR SAN LUIS, ARIZ.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
OCT.								
30...	3990	5.79	1100	831	13	6520	7.9	--
NOV.								
20...	4120	6.07	1140	866	14	6850	7.9	--
DEC.								
18...	3700	5.36	1040	781	13	6030	7.9	--
JAN.								
08...	3500	4.94	920	671	12	5500	7.8	--
FEB.								
02...	4100	6.12	1100	825	14	6830	8.5	17.5
MAR.								
02...	1700	2.46	620	419	6.2	2790	8.0	9.0
APR.								
07...	1200	1.69	--	--	3.7	1850	8.2	19.5
20...	1330	1.94	560	390	4.5	2130	8.1	--
30...	1460	2.11	610	406	4.8	2350	8.0	--
MAY								
04...	3160	4.12	860	610	12	4560	7.7	20.0
11...	2810	4.18	830	588	10	4620	7.9	--
18...	2770	4.11	830	580	--	4500	8.0	--
JUNE								
01...	3100	4.22	850	600	11	4670	7.7	25.0
22...	3140	4.57	890	649	11	5060	8.1	--
JULY								
23...	2830	3.90	770	600	11	4430	8.0	29.5
SEP.								
07...	2690	3.74	780	550	9.8	4220	7.7	31.0

FIELD DETERMINATIONS OF WATER QUALITY, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	AIR TEMP-ERATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)
OCT.							
22...	1000	250	6100	8.0	21.0	22.5	9.0
JAN.							
14...	1100	169	7000	8.1	14.0	13.0	10.5
JULY							
22...	1100	3.0	5020	8.2	31.0	35.0	8.1

09522500 GILA GRAVITY MAIN CANAL AT IMPERIAL DAM, ARIZ.-CALIF.

LOCATION.--Lat 32°52'34'', long 114°27'18'', in SE¼SW¼ sec. 30, T. 6 S., R. 21 W., Gila and Salt River meridian, Yuma County, Ariz., at gaging station 0.6 mile downstream from intake at east end of Imperial Dam.

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1971 (partial-record station).
Water temperatures: January 1956 to September 1971.

EXTREMES.--1970-71:
Water temperatures: Maximum, 32.0°C Aug. 27, 29, 30, Sept. 11-13; minimum, 7.0°C Jan. 4-7.

Period of record:
Water temperatures: Maximum, 33.0°C Aug. 29-31, 1970; minimum, 7.0°C Jan. 13-17, 1964, Jan. 4-7, 1971.

REMARKS.--Temperature probe above water surface Nov. 26 to Dec. 4. Unpublished chemical analyses (partial record) for water years 1965-67 available from district office in Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DISCHARGE (CFS)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED SODIUM PLUS POTASSIUM (MG/L)
DEC. 31...	0920	500	10	--	98	38	--	163
JAN. 13...	1340	908	8.0	--	95	40	--	157
APR. 14...	1245	1740	7.0	--	86	43	--	143
JULY 14...	1030	2070	9.9	10	98	33	130	--

DATE	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED NITRITE PLUS NITRATE (N) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED SOLIDS (RESIDUE AT 180°C) (MG/L)
DEC. 31...	--	176	0	390	145	--	--	--	964
JAN. 13...	--	178	0	380	142	--	--	--	984
APR. 14...	--	172	0	375	121	--	--	--	918
JULY 14...	5.4	186	0	330	130	.5	.30	190	900

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	HARDNESS (CA,MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)
DEC. 31...	932	1.31	400	256	3.5	1470	8.3	10.0
JAN. 13...	911	1.34	400	254	3.4	1460	8.2	9.0
APR. 14...	861	1.25	390	249	3.1	1360	8.2	20.0
JULY 14...	830	1.22	380	230	2.9	1320	8.0	30.0

09522500 GILA GRAVITY MAIN CANAL AT IMPERIAL DAM, ARIZ.-CALIF.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	25.0	24.0	18.0	16.0	---	---	10.0	9.0	12.0	12.0	12.0	12.0
2	25.0	25.0	18.0	18.0	---	---	9.0	9.0	12.0	12.0	12.0	11.0
3	25.0	25.0	18.0	18.0	---	---	9.0	8.0	12.0	12.0	11.0	11.0
4	26.0	25.0	18.0	18.0	---	---	8.0	7.0	12.0	12.0	11.0	11.0
5	26.0	25.0	19.0	18.0	13.0	12.0	7.0	7.0	12.0	11.0	13.0	11.0
6	26.0	25.0	18.0	18.0	13.0	12.0	7.0	7.0	12.0	11.0	13.0	13.0
7	25.0	23.0	18.0	18.0	13.0	13.0	8.0	7.0	12.0	11.0	13.0	13.0
8	23.0	22.0	18.0	17.0	13.0	13.0	8.0	8.0	12.0	11.0	13.0	13.0
9	22.0	22.0	17.0	17.0	13.0	13.0	8.0	8.0	12.0	12.0	14.0	13.0
10	22.0	21.0	17.0	17.0	13.0	13.0	8.0	8.0	12.0	12.0	14.0	14.0
11	22.0	21.0	17.0	17.0	13.0	13.0	9.0	8.0	12.0	12.0	15.0	14.0
12	22.0	21.0	17.0	17.0	13.0	12.0	9.0	9.0	13.0	12.0	16.0	15.0
13	22.0	22.0	17.0	16.0	12.0	12.0	9.0	9.0	13.0	12.0	16.0	16.0
14	23.0	22.0	16.0	16.0	12.0	12.0	9.0	9.0	14.0	13.0	16.0	16.0
15	23.0	22.0	16.0	16.0	12.0	12.0	9.0	9.0	14.0	14.0	16.0	15.0
16	23.0	22.0	16.0	16.0	12.0	12.0	9.0	9.0	14.0	14.0	15.0	15.0
17	22.0	22.0	16.0	15.0	12.0	12.0	9.0	9.0	14.0	13.0	16.0	15.0
18	22.0	21.0	15.0	15.0	12.0	12.0	10.0	9.0	14.0	13.0	16.0	15.0
19	22.0	21.0	15.0	15.0	12.0	12.0	12.0	10.0	14.0	13.0	15.0	15.0
20	22.0	21.0	15.0	15.0	12.0	12.0	12.0	11.0	14.0	13.0	15.0	15.0
21	22.0	21.0	15.0	15.0	12.0	12.0	13.0	12.0	13.0	13.0	16.0	15.0
22	22.0	21.0	15.0	15.0	12.0	11.0	12.0	12.0	13.0	13.0	16.0	16.0
23	21.0	21.0	15.0	15.0	11.0	11.0	12.0	12.0	13.0	12.0	17.0	16.0
24	21.0	21.0	15.0	15.0	11.0	11.0	12.0	12.0	12.0	12.0	17.0	17.0
25	21.0	21.0	15.0	15.0	11.0	10.0	12.0	11.0	12.0	12.0	18.0	17.0
26	21.0	20.0	---	---	10.0	9.0	11.0	11.0	12.0	12.0	19.0	18.0
27	20.0	18.0	---	---	10.0	9.0	12.0	11.0	12.0	12.0	19.0	18.0
28	18.0	17.0	---	---	10.0	10.0	12.0	11.0	12.0	12.0	20.0	19.0
29	17.0	17.0	---	---	10.0	10.0	12.0	12.0	---	---	20.0	19.0
30	17.0	16.0	---	---	10.0	10.0	12.0	12.0	---	---	20.0	19.0
31	17.0	16.0	---	---	10.0	10.0	12.0	12.0	---	---	19.0	19.0
MONTH	26.0	16.0	19.0	15.0	13.0	9.0	13.0	7.0	14.0	11.0	20.0	11.0

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	19.0	18.0	22.0	21.0	22.0	21.0	27.0	26.0	30.0	29.0	30.0	30.0
2	18.0	18.0	22.0	21.0	22.0	21.0	27.0	27.0	30.0	29.0	30.0	30.0
3	18.0	18.0	22.0	21.0	22.0	21.0	28.0	27.0	30.0	30.0	30.0	29.0
4	18.0	18.0	21.0	20.0	23.0	22.0	28.0	27.0	30.0	29.0	30.0	29.0
5	19.0	18.0	21.0	20.0	23.0	22.0	28.0	27.0	30.0	29.0	30.0	29.0
6	19.0	18.0	20.0	20.0	24.0	23.0	27.0	27.0	30.0	30.0	30.0	30.0
7	19.0	19.0	20.0	19.0	24.0	23.0	27.0	27.0	30.0	30.0	30.0	30.0
8	20.0	19.0	20.0	19.0	24.0	24.0	28.0	27.0	31.0	30.0	30.0	30.0
9	20.0	19.0	21.0	20.0	24.0	24.0	28.0	27.0	31.0	30.0	31.0	30.0
10	21.0	20.0	22.0	21.0	24.0	23.0	28.0	27.0	30.0	30.0	31.0	30.0
11	21.0	20.0	23.0	22.0	24.0	23.0	29.0	28.0	30.0	29.0	32.0	30.0
12	21.0	20.0	23.0	23.0	25.0	24.0	29.0	28.0	30.0	29.0	32.0	30.0
13	21.0	20.0	24.0	23.0	26.0	24.0	29.0	28.0	30.0	29.0	32.0	30.0
14	21.0	20.0	24.0	23.0	26.0	25.0	29.0	28.0	30.0	29.0	30.0	30.0
15	20.0	18.0	26.0	23.0	27.0	26.0	29.0	28.0	30.0	29.0	30.0	30.0
16	19.0	18.0	26.0	24.0	27.0	26.0	28.0	28.0	30.0	30.0	30.0	30.0
17	19.0	19.0	24.0	23.0	28.0	26.0	28.0	28.0	30.0	30.0	30.0	29.0
18	19.0	17.0	23.0	22.0	27.0	27.0	29.0	28.0	30.0	30.0	29.0	26.0
19	17.0	17.0	22.0	21.0	27.0	26.0	29.0	28.0	30.0	30.0	26.0	24.0
20	18.0	17.0	22.0	21.0	28.0	27.0	30.0	28.0	30.0	30.0	24.0	24.0
21	18.0	17.0	22.0	22.0	28.0	27.0	30.0	29.0	30.0	29.0	24.0	24.0
22	18.0	17.0	22.0	21.0	28.0	27.0	29.0	29.0	29.0	28.0	24.0	24.0
23	19.0	18.0	22.0	21.0	28.0	27.0	29.0	28.0	30.0	29.0	24.0	24.0
24	19.0	18.0	23.0	22.0	28.0	27.0	29.0	28.0	30.0	30.0	24.0	24.0
25	19.0	18.0	24.0	23.0	27.0	27.0	29.0	28.0	30.0	30.0	24.0	24.0
26	18.0	17.0	24.0	23.0	27.0	26.0	29.0	28.0	31.0	30.0	24.0	24.0
27	18.0	17.0	24.0	22.0	27.0	26.0	29.0	28.0	32.0	30.0	24.0	24.0
28	19.0	18.0	22.0	21.0	27.0	26.0	29.0	28.0	31.0	30.0	24.0	23.0
29	20.0	19.0	21.0	19.0	26.0	25.0	29.0	28.0	32.0	31.0	23.0	22.0
30	21.0	20.0	21.0	20.0	27.0	25.0	29.0	28.0	32.0	31.0	22.0	20.0
31	---	---	21.0	21.0	---	---	29.0	29.0	31.0	30.0	---	---
MONTH	21.0	17.0	26.0	19.0	28.0	21.0	30.0	26.0	32.0	28.0	32.0	20.0

MAXIMUM VALUE = 32.0 MINIMUM VALUE = 7.0

09529160 SOUTH GILA PUMP OUTLET CHANNEL NO. 3 NEAR YUMA, ARIZ.

LOCATION.--Lat 32°43'04", long 114°30'12", in NW¼SE¼ sec. 22, T. 8 S., R. 22 W., Yuma County, at gaging station 0.5 mile upstream from outlet to Gila River, and 6 miles east of Yuma.

PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1971.

REMARKS.--No flow for many days of most months. Unpublished miscellaneous chemical analyses for water years 1965-68 available from district office in Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DISCHARGE (CFS)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED SODIUM PLUS POTASSIUM (MG/L)
FEB. 22...	--	--	7.0	--	204	100	--	550
MAR. 25...	1505	41	24	--	258	121	--	687
APR. 15...	1545	43	22	--	254	123	--	713
JUNE 22...	1550	--	23	--	216	90	--	512
JULY 26...	1050	42	28	10	250	110	820	--
AUG. 27...	1100	43	28	50	280	120	850	--

DATE	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED NITRITE PLUS NITRATE (N) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED SOLIDS (RESIDUE AT 180°C) (MG/L)
FEB. 22...	--	144	0	430	1100	--	--	--	2770
MAR. 25...	--	352	0	520	1280	--	--	--	3530
APR. 15...	--	360	0	540	1300	--	--	--	3560
JUNE 22...	--	282	0	340	1020	--	--	--	2810
JULY 26...	8.4	379	0	520	1400	.8	.59	920	3550
AUG. 27...	10	395	0	640	1500	.6	.73	990	3970

09529160 SOUTH GILA PUMP OUTLET CHANNEL NO. 3 NEAR YUMA, ARIZ.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
FEB. 22...	2460	3.77	920	802	7.9	4490	8.3	22.0
MAR. 25...	3070	4.80	1140	852	8.8	5450	8.0	21.5
APR. 15...	3130	4.84	1140	845	9.2	5540	7.8	22.0
JUNE 22...	2340	3.82	910	679	7.4	4340	7.9	23.5
JULY 26...	3330	4.83	1100	770	11	5340	8.0	24.0
AUG. 27...	3630	5.40	1200	870	11	5570	7.7	23.0

09529240 SOUTH GILA PUMP OUTLET CHANNEL NO. 2 NEAR YUMA, ARIZ.

LOCATION.--Lat 32°42'31'', long 114°31'45'', in NW¼SW¼ sec.28, T.8 S., R.22 W., Yuma County, at gaging station 0.6 mile upstream from outlet to Gila River, and 4 miles east of Yuma.

PERIOD OF RECORD.--October 1968 to September 1971.

REMARKS.--Unpublished miscellaneous chemical analyses for water years 1965-68 available from district office in Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)
OCT. 23...	0930	8.9	23	--	117	38	--	382
NOV. 20...	1225	25	23	--	154	62	--	521
DEC. 18...	1030	41	23	--	135	59	--	449
JAN. 13...	1100	--	19	--	89	41	--	374
FEB. 17...	1400	34	21	--	139	59	--	425
MAR. 15...	1025	40	21	--	149	58	--	438
APR. 20...	1440	40	21	--	147	59	--	448
MAY 18...	0850	--	20	--	141	54	--	359
JUNE 14...	0945	28	20	--	140	51	--	417
JULY 15...	1440	40	28	10	150	58	440	--
AUG. 12...	1115	41	28	10	150	59	490	--
SEP. 13...	1020	8.2	27	10	140	55	380	--

DATE	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)
OCT. 23...	--	290	0	480	385	--	--	--	1660
NOV. 20...	--	298	0	480	730	--	--	--	2230
DEC. 18...	--	232	0	460	630	--	--	--	2010
JAN. 13...	--	222	0	480	370	--	--	--	1640
FEB. 17...	--	270	0	450	585	--	--	--	1930
MAR. 15...	--	272	0	440	625	--	--	--	2000
APR. 20...	--	272	0	440	640	--	--	--	2040
MAY 18...	--	235	0	380	545	--	--	--	1780
JUNE 14...	--	268	0	460	545	--	--	--	1870
JULY 15...	5.7	287	0	360	700	.8	.74	840	2020
AUG. 12...	5.7	284	0	420	700	.8	.75	710	2050
SEP. 13...	6.3	257	0	380	560	.1	.06	580	1830

09529240 SOUTH GILA PUMP OUTLET CHANNEL NO. 2 NEAR YUMA, ARIZ.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
OCT. 23...	1570	2.26	450	212	7.8	2560	8.3	22.5
NOV. 20...	2120	3.03	640	396	9.0	3580	8.0	23.0
DEC. 18...	1870	2.73	580	390	8.1	3220	8.1	23.0
JAN. 13...	1480	2.23	390	208	8.2	2500	8.1	22.0
FEB. 17...	1810	2.62	590	368	7.6	3090	8.0	22.5
MAR. 15...	1870	2.72	610	387	7.7	3240	8.2	23.0
APR. 20...	1890	2.77	610	387	7.9	3260	7.9	21.5
MAY 18...	1620	2.42	575	382	6.5	2860	8.1	22.5
JUNE 14...	1770	2.54	560	340	7.7	3000	8.2	23.5
JULY 15...	1890	2.75	610	380	7.7	3250	7.9	25.0
AUG. 12...	2000	2.79	620	380	8.6	3260	7.7	24.5
SEP. 13...	1680	2.49	580	370	6.9	2890	8.0	25.0

09529300 WELLTON-MOHAWK MAIN OUTLET DRAIN NEAR YUMA, ARIZ.

LOCATION.--Lat 32°44'35", long 114°26'02", in NW¼NE¼ sec.17, T.8 S., R.21 W., Yuma County, at gaging station, 8 miles upstream from outlet to Gila River, and 11 miles east of Yuma.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS- SOLVED SILICA (SIO2) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM PLUS POTAS- SIUM (MG/L)	BICAR- BONATE (HCO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)
OCT.								
05...	--	24	302	123	1140	414	1040	1640
12...	--	26	290	121	1110	404	1060	1560
19...	--	22	294	113	1080	408	1000	1540
26...	--	25	294	118	1130	408	1090	1560
NOV.								
02...	--	23	290	126	1080	412	1020	1560
09...	0110	22	294	123	1140	408	1090	1590
16...	--	25	292	120	1130	410	1030	1610
23...	--	24	284	129	1120	408	1050	1600
30...	--	25	290	126	1100	410	1020	1580
DEC.								
07...	--	24	290	126	1110	412	1020	1600
14...	--	24	294	123	1090	410	1050	1570
21...	--	25	280	112	1060	406	1040	1450
28...	--	26	268	124	1040	370	1030	1460
JAN.								
04...	--	24	288	117	1070	410	1030	1510
11...	0235	27	276	120	1050	406	990	1490
18...	--	24	274	111	1090	346	1040	1520
25...	0440	23	286	118	1060	404	1010	1500
FEB.								
01...	0230	26	300	120	1080	416	1030	1540
08...	--	25	302	118	1060	412	1030	1510
15...	0110	23	226	87	733	388	840	938
22...	--	25	220	85	677	390	820	850
MAR.								
01...	0200	23	222	89	772	392	850	988
08...	0105	24	244	95	824	384	890	1100
15...	0225	25	250	96	814	394	880	1100
22...	--	26	248	93	854	396	930	1110
29...	--	24	258	89	860	396	910	1140
APR.								
05...	0210	22	250	101	835	394	890	1140
12...	0200	23	246	99	829	388	890	1120
19...	0145	25	244	90	814	390	900	1060
26...	--	24	248	102	857	392	910	1160
MAY								
03...	0140	24	226	91	708	392	870	888
10...	--	24	220	88	729	388	840	925
17...	--	24	218	91	735	380	850	938
24...	0145	23	222	89	748	372	850	962
31...	--	22	234	87	760	372	860	988
JUNE								
07...	--	25	222	94	750	390	860	962
14...	--	26	226	87	752	390	860	950
21...	--	26	242	91	804	392	890	1050
28...	--	24	242	91	797	388	880	1050
JULY								
05...	0145	25	236	88	809	386	890	1040
12...	0145	25	264	107	914	392	950	1260
19...	0255	26	266	106	910	396	940	1260
26...	--	23	270	104	929	398	950	1280
AUG.								
02...	--	22	262	89	829	392	900	1110
09...	--	24	254	87	794	392	880	1050
16...	--	24	254	94	811	396	885	1090
23...	0245	23	250	89	802	394	880	1060
30...	0130	25	242	91	793	394	880	1040
SEP.								
06...	--	21	202	87	690	320	830	875
13...	0420	22	226	87	703	386	830	900
20...	--	23	238	96	812	396	900	1060
27...	--	24	254	92	832	404	900	1100

09529300 WELLTON-MOHAWK MAIN OUTLET DRAIN NEAR YUMA, ARIZ.--Continued

PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1971.

REMARKS.--Unpublished chemical analyses (continuing record) for water years 1961-68 available from district office in Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
OCT.								
05...	4800	4480	6.53	1260	920	14	7260	8.0
12...	4740	4370	6.45	1220	888	14	7140	8.0
19...	4610	4250	6.27	1200	866	14	6950	8.0
26...	4680	4420	6.36	1220	886	14	7090	8.1
NOV.								
02...	4680	4300	6.36	1240	902	--	7110	8.1
09...	4760	4460	6.47	1240	906	14	7250	8.1
16...	4660	4410	6.34	1220	884	14	7180	8.1
23...	4720	4410	6.42	1240	906	14	7180	8.1
30...	4720	4350	6.42	1240	904	14	7070	8.0
DEC.								
07...	4740	4380	6.45	1240	902	14	7200	8.1
14...	4660	4340	6.34	1240	904	14	7040	8.0
21...	4450	4170	6.05	1160	827	14	6700	8.2
28...	4440	4130	6.04	1180	876	13	6750	8.0
JAN.								
04...	4540	4240	6.17	1200	864	13	6890	8.1
11...	4450	4160	6.05	1180	847	13	6740	8.0
18...	4530	4230	6.16	1140	856	14	6920	8.0
25...	4570	4200	6.22	1200	868	13	6980	8.0
FEB.								
01...	4660	4300	6.34	1240	899	13	7040	8.0
08...	4660	4250	6.34	1240	902	13	7060	8.1
15...	3330	3040	4.53	920	602	11	5000	8.2
22...	3150	2870	4.28	900	580	9.8	4700	8.2
MAR.								
01...	3410	3140	4.64	920	598	11	5090	8.0
08...	3700	3370	5.03	1000	685	11	5590	8.2
15...	3680	3360	5.00	1020	697	11	5560	8.2
22...	3700	3460	5.03	1000	676	12	5640	8.2
29...	3750	3480	5.10	1010	686	12	5670	8.1
APR.								
05...	3770	3440	5.13	1040	717	11	5680	8.2
12...	3740	3400	5.09	1020	702	11	5650	8.1
19...	3650	3330	4.96	980	660	11	5510	8.1
26...	3810	3500	5.18	1040	718	12	5700	8.1
MAY								
03...	3270	3000	4.45	940	618	10	4850	8.1
10...	3240	3020	4.41	910	592	11	4920	8.0
17...	3280	3050	4.46	920	608	11	4930	8.1
24...	3360	3080	4.57	920	615	11	5020	6.1
31...	3370	3140	4.58	940	635	11	5060	8.0
JUNE								
07...	3340	3110	4.54	940	620	11	4990	8.1
14...	3340	3100	4.54	920	600	11	4970	8.1
21...	3610	3300	4.91	980	658	11	5400	8.2
28...	3550	3280	4.83	980	662	11	5300	8.1
JULY								
05...	3540	3280	4.81	950	634	11	5350	8.0
12...	4080	3720	5.55	1100	778	12	6180	8.0
19...	4030	3710	5.48	1100	776	12	6090	8.1
26...	4080	3760	5.55	1100	774	12	6150	8.1
AUG.								
02...	3660	3410	4.98	1020	698	11	5560	8.0
09...	3580	3280	4.87	990	668	11	5410	8.1
16...	3630	3360	4.94	1020	696	11	5490	8.0
23...	3600	3300	4.90	990	667	11	5420	8.0
30...	3540	3270	4.81	980	657	11	5340	8.1
SEP.								
06...	3100	2860	4.22	860	598	10	4750	8.0
13...	3210	2960	4.37	920	604	10	4810	8.0
20...	3550	3330	4.83	990	666	11	5410	8.0
27...	3710	3400	5.05	1010	678	11	5550	8.0

09529360 SOUTH GILA PUMP OUTLET CHANNEL NO. 1 NEAR YUMA, ARIZ.

LOCATION.--Lat 32°42'24'', long 114°33'19'', in SW¼NE¼ sec. 30, T. 8 S., R. 22 W., Yuma County, at gaging station, 0.2 mile upstream from outlet to Gila River, and 4 miles east of Yuma.

PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1971.

REMARKS.--Unpublished miscellaneous chemical analyses for water years 1966-68 available from district office in Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)
OCT. 23...	0900	36	21	--	145	53	--	462
NOV. 20...	1115	41	22	--	153	63	--	451
DEC. 18...	0900	41	22	--	145	55	--	469
JAN. 13...	1000	--	18	--	127	49	--	438
FEB. 16...	0950	45	20	--	154	57	--	444
MAR. 15...	0915	41	22	--	145	60	--	441
APR. 20...	1555	42	20	--	151	57	--	464
MAY 18...	0905	--	19	--	133	55	--	434
JUNE 14...	1115	37	19	--	137	52	--	441
JULY 15...	1610	38	26	10	130	56	420	--
AUG. 12...	1450	41	26	10	150	60	470	--
SEP. 13...	0900	22	26	10	130	53	460	--

DATE	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)
OCT. 23...	--	284	0	520	575	--	--	--	2000
NOV. 20...	--	288	0	490	620	--	--	--	2100
DEC. 18...	--	242	0	530	610	--	--	--	2060
JAN. 13...	--	224	0	520	530	--	--	--	1970
FEB. 16...	--	284	0	480	605	--	--	--	2050
MAR. 15...	--	290	0	480	590	--	--	--	2050
APR. 20...	--	286	0	510	605	--	--	--	2070
MAY 18...	--	285	0	510	525	--	--	--	1980
JUNE 14...	--	278	0	510	535	--	--	--	1970
JULY 15...	5.1	307	0	510	530	.9	1.1	810	1930
AUG. 12...	5.4	304	0	500	660	.9	.90	620	2060
SEP. 13...	5.9	312	0	490	520	.8	.71	250	--

09529360 SOUTH GILA PUMP OUTLET CHANNEL NO. 1 NEAR YUMA, ARIZ.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
OCT.								
23...	1920	2.72	580	347	8.3	3130	8.3	23.0
NOV.								
20...	1940	2.86	640	404	7.7	3330	8.0	23.0
DEC.								
18...	1950	2.80	590	392	8.4	3270	8.1	22.0
JAN.								
13...	1790	2.68	520	336	8.4	3080	8.0	22.0
FEB.								
16...	1900	2.79	620	387	7.8	3260	8.1	22.5
MAR.								
15...	1880	2.79	610	372	7.8	3250	8.2	22.5
APR.								
20...	1950	2.82	610	376	8.2	3250	8.1	23.5
MAY								
18...	1820	2.69	560	326	8.0	3060	8.1	23.0
JUNE								
14...	1830	2.68	555	327	8.1	3070	8.1	25.0
JULY								
15...	1830	2.62	550	300	7.8	3030	7.2	26.0
AUG.								
12...	2030	2.80	620	370	8.2	3160	7.7	25.5
SEP.								
13...	1840	2.50	540	290	8.6	3150	7.9	23.0

09529440 SOUTH GILA PUMP OUTLET CHANNEL NO. 4 NEAR YUMA, ARIZ.

LOCATION.--Lat 32°42'46'', long 114°35'50'', in NW¼NW¼ sec.26, T.8 S., R.23 W., Yuma County, at gaging station, 1.5 miles upstream from outlet to Colorado River, and 1.5 miles east of Yuma.

PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1971.

REMARKS.--No flow for many days of most months. Unpublished miscellaneous chemical analyses for water years 1966-68 available from district office in Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)
MAR. 25...	1130	23	22	--	322	126	--	768
JUNE 22...	1500	17	21	--	258	111	--	674
JULY 26...	0930	25	28	10	300	120	800	--
AUG. 26...	1230	24	27	20	310	130	830	--
SEP. 24...	1420	1.2	17	10	130	50	270	--

DATE	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)
MAR. 25...	--	344	0	570	1500	--	--	--	3910
JUNE 22...	--	324	0	585	1200	--	--	--	3480
JULY 26...	7.2	369	0	420	1700	.6	.04	750	4000
AUG. 26...	9.3	382	0	560	1600	.5	.09	740	3960
SEP. 24...	6.6	209	0	440	380	.6	.43	360	1430

09529440 SOUTH GILA PUMP OUTLET CHANNEL NO. 4 NEAR YUMA, ARIZ.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
MAR. 25...	3480	5.32	1320	1040	9.2	6080	7.9	22.5
JUNE 22...	3010	4.73	1100	834	8.8	5280	7.8	24.5
JULY 26...	3560	5.44	1200	940	9.9	5800	7.4	24.0
AUG. 26...	3660	5.39	1300	1000	10	5750	7.4	24.0
SEP. 24...	1400	1.94	530	360	5.1	2290	7.8	26.0

09530000 RESERVATION MAIN DRAIN NO. 4 NEAR YUMA, ARIZ.

LOCATION.--Lat 32°44'09'', long 114°37'16'', in NW¼SE¼ sec.28, T.16 S., R.22 E., San Bernardino meridian, Imperial County, Calif., at gaging station, at railroad culvert, 0.2 mile upstream from crossing of U.S. Highway 80, and 0.7 mile north of Yuma.

PERIOD OF RECORD.--October 1968 to September 1971.

REMARKS.--No flow Dec. 6, 25, Feb. 28, May 2-4, 16, 17, 22, 23, June 6, 7, 13, 27, July 4, 5, Aug. 22, 25-29. Unpublished miscellaneous chemical analyses for water years 1962-68 available from district office in Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)
OCT.								
26...	1112	51	17	--	149	46	--	197
DEC.								
04...	--	--	19	--	154	51	--	216
30...	1530	39	20	--	140	49	--	220
JAN.								
25...	1000	40	17	--	153	46	--	212
FEB.								
24...	0840	52	18	--	154	43	--	210
MAR.								
23...	1530	47	18	--	154	53	--	211
APR.								
23...	0930	51	16	--	155	49	--	215
MAY								
27...	0930	46	17	--	159	48	--	214
JUNE								
29...	1000	52	19	--	154	46	--	210
JULY								
27...	1000	51	25	10	150	45	220	--
AUG.								
24...	1015	56	24	40	170	50	240	--
SEP.								
27...	0925	57	22	10	160	49	210	--

DATE	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)
OCT.									
26...	--	260	0	450	218	--	--	--	1300
DEC.									
04...	--	270	0	475	248	--	--	--	1350
30...	--	222	0	495	235	--	--	--	1340
JAN.									
25...	--	266	0	480	222	--	--	--	1330
FEB.									
24...	--	260	0	475	220	--	--	--	1320
MAR.									
23...	--	260	0	490	238	--	--	--	1390
APR.									
23...	--	264	0	485	238	--	--	--	1410
MAY									
27...	--	266	0	485	240	--	--	--	1410
JUNE									
29...	--	264	0	475	228	--	--	--	1360
JULY									
27...	4.3	286	0	450	260	.6	.19	240	1340
AUG.									
24...	6.3	253	0	560	300	.2	.11	270	1450
SEP.									
27...	5.2	276	.0	480	250	.6	.11	260	1340

09530000 RESERVATION MAIN DRAIN NO. 4 NEAR YUMA, ARIZ.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
OCT.								
26...	1210	1.77	560	347	3.6	1930	8.2	17.5
DEC.								
04...	1300	1.84	595	374	3.9	1990	8.0	15.5
30...	1270	1.82	550	368	4.1	2020	8.2	17.5
JAN.								
25...	1260	1.81	570	352	3.9	1970	7.9	15.0
FEB.								
24...	1250	1.80	560	347	3.9	1960	8.0	15.0
MAR.								
23...	1290	1.89	600	387	3.7	2040	8.1	25.0
APR.								
23...	1290	1.92	590	374	3.9	2020	8.0	19.0
MAY								
27...	1300	1.92	595	377	3.8	2050	8.0	20.0
JUNE								
29...	1260	1.85	575	358	3.8	1980	7.8	23.0
JULY								
27...	1300	1.82	560	330	4.0	1920	7.3	26.0
AUG.								
24...	1480	1.97	630	420	4.2	2010	7.6	26.0
SEP.								
27...	1310	1.82	600	370	3.7	2000	7.7	20.5

09531700 MAIN OUTLET DRAIN EXTENSION NEAR MORELOS DAM, ARIZ.

LOCATION.--Lat 32°43'43", long 114°42'24", in NW¼ sec.36, T.16 S., R.21 E., San Bernardino meridian, Yuma County, at gaging station at gate structure dividing M.O.D.E. 2 and M.O.D.E. 3, and 2 miles northeast of Morelos Dam.

PERIOD OF RECORD.--Chemical analyses: August 1969 to September 1971.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)
OCT. 22...	0825	309	--	--	270	100	1200	13
NOV. 27...	0810	308	--	--	270	130	1100	12
DEC. 22...	0900	--	30	40	280	120	1000	12
JAN. 22...	0750	--	30	120	270	130	1200	11
FEB. 10...	0910	108	29	300	240	98	840	8.7
MAR. 08...	0905	305	30	100	240	100	910	10
APR. 21...	0915	283	30	60	240	100	950	8.8
MAY 12...	0930	126	28	40	220	92	770	.5
JUNE 16...	0920	264	29	20	220	92	800	8.8
JULY 22...	0915	260	15	10	270	110	900	8.3
AUG. 18...	0835	278	29	10	240	93	890	9.5
SEP. 23...	0845	290	30	10	240	95	850	8.6

DATE	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)
OCT. 22...	320	0	970	1700	--	--	--	--	4650
NOV. 27...	308	0	900	1700	--	--	--	--	4370
DEC. 22...	356	0	1100	1400	2.6	3.5	--	2000	4430
JAN. 22...	363	0	1000	1600	2.3	2.6	.06	1800	4490
FEB. 10...	346	0	840	1100	2.1	3.1	9.1	1500	3460
MAR. 08...	353	0	880	1200	2.1	.20	--	2300	3680
APR. 21...	310	0	980	1200	1.9	1.6	--	1400	3650
MAY 12...	317	0	890	1100	1.4	2.3	--	1400	3260
JUNE 16...	276	0	840	1100	2.3	2.4	--	1500	3360
JULY 22...	345	0	930	1400	2.6	.04	--	1700	3860
AUG. 18...	350	0	930	1100	1.6	2.3	--	3000	3820
SEP. 23...	355	0	900	1200	2.5	2.5	--	1500	3760

09531700 MAIN OUTLET DRAIN EXTENSION NEAR MORELOS DAM, ARIZ.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
OCT. 22...	--	6.32	1100	840	16	7090	7.6	--
NOV. 27...	--	5.94	1200	950	14	6880	7.6	--
DEC. 22...	4100	6.02	1200	908	13	6660	7.6	18.0
JAN. 22...	4400	6.11	1200	902	15	6820	8.0	19.5
FEB. 10...	3400	4.71	1000	716	12	5190	7.8	18.0
MAR. 08...	3600	5.00	1000	710	13	5570	8.1	19.0
APR. 21...	3670	4.99	1000	760	13	5650	7.8	20.0
MAY 12...	3270	4.45	930	670	11	4910	7.7	24.5
JUNE 16...	3240	4.57	930	700	11	5190	7.5	25.5
JULY 22...	3810	5.25	1100	840	12	5980	7.7	27.0
AUG. 18...	3480	5.20	980	690	12	5180	7.5	27.0
SEP. 23...	3510	5.11	990	700	12	5500	7.6	23.0

FIELD DETERMINATIONS OF WATER QUALITY, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	AIR TEMP-ERATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)
OCT. 22...	0825	309	--	8.0	22.0	19.0	8.1
NOV. 27...	0810	308	5600	8.0	19.0	13.0	8.2
DEC. 22...	0900	173	6500	8.7	18.0	7.0	8.9
FEB. 10...	0910	108	6020	8.0	18.0	13.5	9.1
MAR. 08...	0905	301	5400	7.9	19.0	11.0	8.7
APR. 21...	0915	283	5800	8.1	20.0	17.0	9.1
MAY 12...	0930	126	6870	8.0	24.5	--	8.2
JUNE 16...	0920	264	5140	7.7	25.5	35.0	8.4
JULY 22...	0915	260	6740	7.8	27.0	33.5	7.7
AUG. 18...	0835	278	5640	7.9	27.0	31.0	7.5
SEP. 23...	0845	290	4990	8.0	23.0	29.0	8.0

09534000 MAIN DRAIN NEAR SAN LUIS, ARIZ.

LOCATION.--Lat 32°29'17", long 114°47'16", in SE¼NE¼ sec. 11, T. 11 S., R. 25 W., Yuma County, at gaging station at pumping plant, 0.1 mile upstream from international boundary, and 0.4 mile west of San Luis.

PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1971.

REMARKS.--Unpublished chemical analyses (continuing record) from October 1961 to September 1968 available from district office in Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)
OCT.									
05...	--	--	22	--	157	48	--	325	--
12...	--	--	20	--	149	51	--	326	--
19...	--	--	20	--	145	51	--	331	--
26...	--	--	18	--	153	53	--	322	--
NOV.									
02...	--	--	21	--	149	53	--	335	--
09...	--	--	20	--	155	47	--	335	--
16...	--	--	24	--	153	53	--	330	--
23...	--	--	24	--	151	49	--	322	--
30...	--	--	22	--	150	53	--	328	--
DEC.									
07...	--	--	23	--	149	53	--	328	--
14...	--	--	21	--	148	54	--	325	--
21...	--	--	20	--	144	51	--	313	--
28...	--	--	20	--	151	45	--	329	--
JAN.									
04...	--	--	20	--	147	47	--	325	--
11...	--	--	25	110	150	51	320	--	6.9
18...	--	--	23	--	143	52	--	326	--
25...	--	--	20	--	141	51	--	336	--
FEB.									
01...	0935	--	25	80	150	51	330	--	6.2
16...	--	--	21	--	148	51	--	325	--
22...	--	--	18	--	136	56	--	300	--
MAR.									
01...	1000	170	28	120	140	56	330	--	6.5
08...	--	--	18	--	143	47	--	314	--
15...	--	--	19	--	145	51	--	306	--
22...	--	--	17	--	132	56	--	306	--
29...	--	--	18	--	148	54	--	320	--
APR.									
05...	1005	185	23	20	160	55	330	--	6.3
12...	--	--	18	--	142	52	--	310	--
19...	--	--	17	--	145	53	--	310	--
26...	--	--	19	--	148	49	--	320	--
MAY									
03...	1010	225	26	100	150	57	380	--	6.8
10...	--	--	18	--	149	51	--	325	--
17...	--	--	18	--	145	55	--	313	--
24...	--	--	19	--	148	54	--	326	--
JUNE									
01...	1100	160	24	20	140	51	330	--	6.0
07...	--	--	20	--	143	51	--	316	--
14...	--	--	15	--	138	46	--	287	--
21...	--	--	20	--	143	51	--	313	--
28...	--	--	20	--	146	51	--	322	--
JULY									
06...	1005	180	25	10	160	55	330	--	6.0
12...	--	--	20	--	145	53	--	323	--
19...	--	--	18	--	139	49	--	307	--
26...	--	--	19	--	143	47	--	305	--
AUG.									
02...	1040	218	25	10	150	51	360	--	5.3
16...	--	--	18	--	143	48	--	297	--
23...	--	--	20	--	146	51	--	319	--
30...	--	--	22	--	149	48	--	330	--
SEP.									
07...	1030	168	24	5	140	50	330	--	6.0
20...	--	--	17	--	145	51	--	321	--

09534000 MAIN DRAIN NEAR SAN LUIS, ARIZ.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180° C) (MG/L)
OCT.									
05...	280	0	490	395	--	--	--	--	1720
12...	276	0	500	385	--	--	--	--	1680
19...	272	0	490	395	--	--	--	--	1660
26...	268	0	490	405	--	--	--	--	1750
NOV.									
02...	276	0	500	405	--	--	--	--	1730
09...	278	0	490	405	--	--	--	--	1690
16...	280	0	510	395	--	--	--	--	1690
23...	274	0	500	380	--	--	--	--	1700
30...	280	0	490	400	--	--	--	--	1700
DEC.									
07...	280	0	490	400	--	--	--	--	1680
14...	276	0	500	390	--	--	--	--	1700
21...	264	0	480	380	--	--	--	--	1590
28...	264	0	490	390	--	--	--	--	1630
JAN.									
04...	268	0	490	380	--	--	--	--	1620
11...	278	0	490	400	.5	1.1	--	440	1660
18...	264	0	480	400	--	--	--	--	1650
25...	272	0	490	395	--	--	--	--	1660
FEB.									
01...	282	0	500	370	.6	1.2	7.6	490	1690
16...	278	0	490	390	--	--	--	--	1720
22...	264	0	480	360	--	--	--	--	1640
MAR.									
01...	281	0	430	410	.5	.10	.15	440	--
08...	254	0	470	380	--	--	--	--	1620
15...	266	0	490	360	--	--	--	--	1640
22...	262	0	490	355	--	--	--	--	1620
29...	280	0	500	380	--	--	--	--	1710
APR.									
05...	275	0	500	400	.8	.60	--	410	1670
12...	268	0	490	365	--	--	--	--	1640
19...	268	0	500	365	--	--	--	--	1670
26...	268	0	510	365	--	--	--	--	1680
MAY									
03...	342	0	460	440	.6	.70	--	450	1700
10...	272	0	500	385	--	--	--	--	1720
17...	270	0	500	375	--	--	--	--	1700
24...	274	0	510	385	--	--	--	--	1720
JUNE									
01...	276	0	530	420	.5	.54	--	460	1750
07...	260	0	490	375	--	--	--	--	1670
14...	252	0	465	332	--	--	--	--	1550
21...	260	0	485	375	--	--	--	--	1650
28...	266	0	500	380	--	--	--	--	1710
JULY									
06...	280	0	470	430	.5	.57	--	450	1680
12...	268	0	500	385	--	--	--	--	1690
19...	248	0	480	365	--	--	--	--	1610
26...	252	0	480	360	--	--	--	--	1590
AUG.									
02...	282	0	490	420	.8	.77	--	390	1690
16...	254	0	480	350	--	--	--	--	1580
23...	272	0	490	380	--	--	--	--	1710
30...	268	0	510	380	--	--	--	--	1670
SEP.									
07...	279	0	490	390	.9	.61	--	390	1630
20...	266	9	510	368	--	--	--	--	1680

09534000 MAIN DRAIN NEAR SAN LUIS, ARIZ.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	HARD- NESS (CA,MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	SODIUM AD- SORP- TION RATIO	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH (UNITS)	TEMP- ERATURE (DEG C)
OCT.								
05...	1580	2.34	590	360	2.9	2550	8.0	--
12...	1570	2.28	580	354	5.9	2530	8.0	--
19...	1570	2.26	570	347	6.0	2510	8.0	--
26...	1580	2.38	600	380	5.7	2610	8.1	--
NOV.								
02...	1600	2.35	590	364	6.0	2600	8.0	--
09...	1590	2.30	580	352	6.1	2600	8.0	--
16...	1600	2.30	600	370	5.9	2570	8.0	--
23...	1560	2.31	580	356	5.8	2560	8.0	--
30...	1580	2.31	590	360	5.9	2580	8.0	--
DEC.								
07...	1580	2.28	590	360	5.9	2580	8.0	--
14...	1580	2.31	590	364	5.8	2560	8.2	--
21...	1520	2.16	570	354	5.7	2440	8.1	--
28...	1560	2.22	560	344	6.0	2520	8.1	--
JAN.								
04...	1540	2.20	560	340	6.0	2520	8.1	--
11...	1600	2.26	580	352	5.8	2500	7.8	--
18...	1560	2.24	570	354	5.9	2560	8.2	--
25...	1570	2.26	560	337	6.2	2530	8.1	--
FEB.								
01...	1600	2.30	580	349	5.9	2580	8.0	18.0
16...	1560	2.34	580	352	5.9	2590	8.1	--
22...	1480	2.23	570	354	5.5	2450	8.1	--
MAR.								
01...	1500	2.04	580	349	6.0	2600	8.0	17.0
08...	1500	2.20	550	342	5.8	2490	8.2	--
15...	1500	2.23	570	352	5.6	2490	8.2	--
22...	1490	2.20	560	345	5.6	2470	8.1	--
29...	1560	2.33	590	360	5.7	2560	8.1	--
APR.								
05...	1610	2.19	--	--	5.7	2500	8.0	21.0
12...	1510	2.23	570	350	5.7	2500	8.3	--
19...	1520	2.27	580	360	5.6	2510	8.1	--
26...	1540	2.28	570	350	5.8	2510	8.1	--
MAY								
03...	1690	2.31	610	330	6.7	2510	7.7	18.0
10...	1560	2.34	580	357	5.9	2570	8.1	--
17...	1540	2.31	590	368	5.6	2570	8.1	--
24...	1560	2.34	590	366	5.8	2590	8.1	--
JUNE								
01...	1640	2.38	560	330	6.1	2510	7.9	--
07...	1520	2.27	565	352	5.8	2510	8.0	--
14...	1410	2.11	535	328	5.4	2330	8.1	--
21...	1520	2.24	565	352	5.7	2480	8.0	--
28...	1550	2.33	575	357	5.8	2540	8.0	--
JULY								
06...	1620	2.28	630	400	5.7	2520	8.0	28.0
12...	1560	2.30	580	360	5.8	2560	8.0	--
19...	1480	2.19	550	346	5.7	2410	8.1	--
26...	1480	2.16	550	344	5.7	2410	8.1	--
AUG.								
02...	1640	2.30	580	350	6.5	2540	7.8	28.0
16...	1460	2.15	555	346	5.5	2390	8.1	--
23...	1540	2.33	575	352	5.8	2560	8.1	--
30...	1570	2.27	570	350	6.0	2550	8.0	--
SEP.								
07...	1570	2.14	560	330	6.1	2450	7.9	25.8
20...	1540	2.28	570	352	5.8	2490	7.9	--

09534300 WEST MAIN CANAL WASTEWAY NEAR YUMA, ARIZ.

LOCATION.--Lat 32°29'29", long 114°47'39", in SE¼NE¼ sec.11, T.11 S., R.25 W., Yuma County, at gaging station, 150 ft upstream from outlet into Main Drain, 300 ft north of southerly international boundary, 0.2 mile west of San Luis, Ariz., and 19 miles south of Yuma.

PERIOD OF RECORD.--Chemical analyses: May to September 1971

CHEMICAL ANALYSES, MAY TO SEPTEMBER 1971

DATE	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)	BICAR-BONATE (HCO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 °C) (MG/L)
MAR.								
22...	6.0	91	37	147	164	380	121	908
29...	6.0	96	33	155	172	380	125	934
APR.								
05...	6.0	94	33	147	164	370	121	952
14...	6.0	92	37	149	172	375	123	918
19...	5.0	97	34	153	172	380	125	912
MAY								
03...	5.0	98	38	152	170	395	128	952
10...	4.0	95	36	163	170	390	138	972
17...	4.0	97	37	143	172	380	120	932
JUNE								
02...	5.0	89	35	160	140	390	136	948
14...	6.0	93	34	139	158	360	119	896
21...	7.0	93	34	159	158	380	136	946
28...	6.0	86	35	143	148	370	116	888
JULY								
12...	8.0	86	33	146	132	370	124	884
19...	7.0	86	36	142	134	375	120	874
26...	8.0	89	34	143	144	365	123	894
AUG.								
09...	10	97	35	161	170	395	131	968
24...	8.0	84	35	147	140	375	121	888
SEP.								
13...	8.0	88	33	153	148	370	128	910
27...	6.0	89	34	159	148	380	134	920

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
MAR.							
22...	864	1.23	380	246	3.3	1360	8.4
29...	881	1.27	375	234	3.5	1380	8.2
APR.							
05...	853	1.29	370	236	3.3	1370	8.3
14...	868	1.25	380	239	3.3	1360	8.3
19...	880	1.24	380	239	3.4	1370	8.2
MAY							
03...	901	1.29	400	260	3.3	1400	8.2
10...	911	1.32	385	246	3.6	1440	8.2
17...	867	1.27	395	254	3.1	1380	8.3
JUNE							
02...	885	1.29	365	250	3.6	1410	8.3
14...	830	1.22	370	240	3.1	1330	8.3
21...	888	1.29	370	240	3.6	1400	8.3
28...	830	1.21	360	238	3.3	1300	8.2
JULY							
12...	833	1.20	350	242	3.4	1330	8.3
19...	833	1.19	360	250	3.2	1330	8.3
26...	834	1.22	360	242	3.3	1330	8.2
AUG.							
09...	914	1.32	385	246	3.6	1410	8.3
24...	840	1.21	355	240	3.4	1320	8.3
SEP.							
13...	854	1.24	355	234	3.5	1350	8.1
27...	876	1.25	360	238	3.6	1380	8.2

09534500 EAST MAIN CANAL WASTEWAY NEAR SAN LUIS, ARIZ.

LOCATION.--Lat 32°29'13", long 114°47'01", in NW¼SW¼ sec. 12, T. 11 S., R. 25 W., Yuma County, at gaging station, 0.2 mile east of Main Drain pumping plant, and 0.2 mile west of San Luis.

PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1971.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)	BICAR-BONATE (HCO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)
OCT.								
05...	9.0	97	36	189	152	395	188	1020
19...	11	104	38	198	176	400	202	1120
NOV.								
02...	10	103	37	202	168	410	202	1120
16...	9.0	108	39	187	152	390	218	1090
DEC.								
01...	9.0	108	44	223	190	435	232	1210
14...	10	105	41	219	192	435	210	1190
28...	11	127	47	252	196	470	290	1320
JAN.								
12...	6.0	105	48	222	178	420	255	1240
26...	10	106	40	201	172	420	205	1130
FEB.								
08...	6.0	104	37	184	178	400	175	1080
22...	7.0	97	36	172	168	385	160	1030
MAR.								
08...	8.0	106	40	193	176	410	198	1120
22...	7.0	101	41	143	164	370	150	968
APR.								
06...	3.0	86	38	176	116	395	175	1000
19...	3.0	96	39	169	160	395	160	992
MAY								
03...	4.0	90	40	182	148	410	168	1020
17...	5.0	79	41	204	112	420	198	1070
JUNE								
01...	7.0	102	40	193	164	410	198	1100
14...	6.0	95	40	164	156	390	158	1010
JULY								
19...	9.0	91	40	165	152	385	159	1010
AUG.								
02...	8.0	90	37	178	142	400	162	1010
16...	8.0	94	33	154	166	370	131	948
31...	9.0	90	37	178	150	395	162	988
SEP.								
13...	10	98	35	186	158	395	180	1010
28...	9.0	98	38	184	164	405	174	1050

09534500 EAST MAIN CANAL WASTEWAY NEAR SAN LUIS, ARIZ.--Continued

REMARKS.--No flow Apr. 11, 18, 22, May 6, 11, June 9, 23, Aug. 18, Sept. 10. Unpublished miscellaneous chemical analyses for water years 1962-65, and continuing record analyses for water years 1966-68 available from district office in Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	HARD- NESS (CA,MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	SODIUM AD- SORP- TION RATIO	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH (UNITS)
OCT.							
05...	990	1.39	390	266	4.2	1560	8.0
19...	1040	1.52	415	276	4.2	1680	8.2
NOV.							
02...	1050	1.52	410	272	4.3	1720	8.2
16...	1030	1.48	430	306	3.9	1670	8.2
DEC.							
01...	1150	1.65	450	294	4.6	1830	8.2
14...	1120	1.62	430	272	4.6	1800	8.2
28...	1300	1.80	510	350	4.9	2070	8.1
JAN.							
12...	1140	1.69	460	314	4.5	1890	8.3
26...	1070	1.54	430	289	4.2	1710	8.0
FEB.							
08...	995	1.47	410	264	3.9	1620	8.1
22...	941	1.40	390	252	3.8	1540	8.2
MAR.							
08...	1040	1.52	430	286	4.1	1700	8.2
22...	894	1.32	420	286	3.0	1440	8.3
APR.							
06...	931	1.36	370	275	4.0	1540	8.2
19...	942	1.35	400	269	3.7	1520	8.1
MAY							
03...	968	1.39	390	268	4.0	1540	8.3
17...	1000	1.46	365	273	4.6	1640	8.3
JUNE							
01...	1030	1.50	420	286	4.1	1680	8.2
14...	931	1.37	400	272	3.6	1510	8.2
JULY							
19...	925	1.37	390	266	3.6	1500	8.2
AUG.							
02...	946	1.37	375	258	4.0	1540	8.2
16...	873	1.29	370	234	3.5	1400	8.2
31...	946	1.34	375	252	4.0	1500	8.2
SEP.							
13...	983	1.37	390	260	4.1	1580	8.1
28...	990	1.43	400	265	4.0	1580	8.0

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD STATIONS, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

LITTLE COLORADO RIVER BASIN

09402000 LITTLE COLORADO RIVER NEAR CAMERON, ARIZ. (LAT 35°55'35", LONG 111°34'00")

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)
JAN., 1971									
27...	1300	.60	8.0	100	91	24	160	--	5.2

DATE	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)
JAN., 1971									
27...	205	0	420	38	.6	.60	2.7	150	916

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC-COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
JAN., 1971								
27...	850	1.25	330	162	3.9	1270	8.0	.5

FIELD DETERMINATIONS OF WATER QUALITY, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	AIR TEMP-ERATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)
JAN.							
27...	1300	.60	1250	6.5	.5	8.0	11.5

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD STATIONS, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

BILL WILLIAMS RIVER BASIN

09426600 BILL WILLIAMS RIVER NEAR PLANET, ARIZ. (LAT 34°15'43", LONG 114°01'40")

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)
JAN., 1971									
11...	1315	--	32	80	61	19	100	--	7.8
JULY									
19...	1035	.01	27	10	45	20	120	--	7.1

DATE	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)
JAN., 1971									
11...	290	0	91	90	1.4	2.1	--	280	490
JULY									
19...	329	0	76	99	1.7	.06	--	400	546

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC-COND-UCTANCE (MICRO MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
JAN., 1971								
11...	540	.67	230	0	2.9	879	7.9	13.5
JULY								
19...	558	.74	190	0	3.7	904	8.1	35.0

FIELD DETERMINATIONS OF WATER QUALITY, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	TIME	DIS-CHARGE (CFS)	SPECI-FIC-COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	AIR TEMP-ERATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)
JULY							
19...	1035	.01	855	8.0	35.0	41.0	9.8

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD STATIONS, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09529000 NORTH GILA DRAIN NO. 1 NEAR YUMA, ARIZ. (LAT 32°45'29", LONG 114°31'20")

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)
NOV., 1970									
27...	1120	7.0	19	--	127	57	--	316	--
JAN., 1971									
26...	0905	--	16	--	114	50	--	269	--
APR.									
23...	1245	13	14	--	114	45	--	223	--
JULY									
22...	1210	7.6	24	20	120	47	280	--	4.2

DATE	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)
NOV., 1970									
27...	288	--	570	290	--	--	--	--	1600
JAN., 1971									
26...	254	--	500	245	--	--	--	--	1370
APR.									
23...	222	--	475	198	--	--	--	--	1280
JULY									
22...	280	0	500	250	.6	.39	--	400	1390

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC-COND-UCTANCE (MICRO MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
NOV., 1970								
27...	1520	2.18	550	314	5.9	2340	8.1	17.0
JAN., 1971								
26	1320	1.86	490	282	5.3	2100	8.1	13.0
APR.								
23...	1180	1.74	470	288	4.5	1860	8.2	23.0
JULY								
22...	1370	1.89	490	260	5.5	2030	7.5	28.5

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD STATIONS, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09529050 NORTH GILA DRAIN NO. 3 NEAR YUMA, ARIZ. (LAT 32°44'28", LONG 114°26'39")

DATE	TIME	DISCHARGE (CFS)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED SODIUM PLUS POTASSIUM (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)
NOV., 1970									
27...	1110	--	25	--	119	42	--	212	--
DEC.									
31...	0900	--	18	--	106	40	--	194	--
JAN., 1971									
26	1000	--	16	--	113	43	--	182	--
APR.									
23	1145	.22	14	--	103	37	--	189	--
JULY									
22	1135	.25	21	20	98	38	170	--	4.9

DATE	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED NITRITE PLUS NITRATE (N) (MG/L)	DISSOLVED ORTHO PHOS-) PHATE (PO4) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED SOLIDS (RESIDUE AT 180°C) (MG/L)
NOV., 1970									
27...	244	--	445	190	--	--	--	--	1270
DEC.									
31...	178	--	420	190	--	--	--	--	1130
JAN., 1971									
26...	208	--	415	180	--	--	--	--	1140
APR.									
23...	196	--	415	162	--	--	--	--	1080
JULY									
22...	204	0	390	160	.6	.08	--	320	1020

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)
NOV., 1970								
27...	1160	1.73	470	270	--	1820	7.9	16.0
DEC.								
31...	1060	1.54	430	284	4.1	1710	8.1	12.0
JAN., 1971								
26...	1050	1.55	460	290	3.7	1690	8.2	10.0
APR.								
23...	1020	1.47	410	250	4.1	1600	8.2	24.5
JULY								
22...	984	1.39	400	230	3.7	1540	7.4	31.5

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD STATIONS, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09529200 BRUCE CHURCH DRAIN NEAR YUMA, ARIZ. (LAT 32°43'46'', LONG 114°31'07'')

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)
NOV., 1970 12...	1400	1.4	27	--	199	71	--	287	--
JAN., 1971 26...	0850	--	20	--	183	86	--	275	--
APR. 23...	1335	--	26	--	169	58	--	319	--
JULY 22...	1255	.42	34	20	190	74	280	--	7.6

DATE	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)
NOV., 1970 12...	412	--	680	262	--	--	--	--	1840
JAN., 1971 26...	356	--	710	268	--	--	--	--	1820
APR. 23...	380	--	650	260	--	--	--	--	1790
JULY 22...	380	0	630	290	.6	.01	--	480	1830

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC-COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
NOV., 1970 12...	1730	2.50	790	452	4.4	2550	8.0	19.5
JAN., 1971 26...	1720	2.48	810	518	4.2	2570	7.8	10.0
APR. 23...	1670	2.43	660	348	5.4	2510	8.2	22.5
JULY 22...	1690	2.49	780	470	4.4	2520	7.9	31.0

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD STATIONS, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09530500 DRAIN 8-B NEAR YUMA, ARIZ. (LAT 32°44'39", LONG 114°41'45")

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)
OCT., 1970 26...	1010	2.0	18	--	98	35	--	185	--
NOV. 30...	--	2.0	19	--	97	34	--	185	--
JAN., 1971 25...	0900	1.3	16	--	101	36	--	177	--
MAR. 22...	0930	--	18	--	106	38	--	201	--
APR. 23...	1100	3.0	19	--	109	41	--	225	--
JULY 27...	0900	1.9	26	20	96	35	190	--	3.8

DATE	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180° C) (MG/L)
OCT., 1970 26...	216	--	395	145	--	--	--	--	1070
NOV. 30...	212	--	395	140	--	--	--	--	1010
JAN., 1971 25...	206	--	395	145	--	--	--	--	1020
MAR. 22...	234	--	435	150	--	--	--	--	1130
APR. 23...	234	--	475	172	--	--	--	--	1220
JULY 27...	226	0	400	160	.6	.02	--	220	1060

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC-COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
OCT., 1970 26...	984	1.46	390	213	4.1	1540	8.1	17.0
NOV. 30...	976	1.37	380	206	4.1	1520	8.1	16.5
JAN., 1971 25...	973	1.39	400	231	3.8	1520	8.0	13.0
MAR. 22...	1060	1.54	420	228	4.3	1660	8.2	16.5
APR. 23...	1160	1.66	440	248	4.7	1770	8.2	23.0
JULY 27...	1020	1.44	380	200	4.2	1530	7.5	26.0

INDEX

Page
Acre-foot, definition of . . . 2
Analyses of samples collected at partial-record stations . . . 146-151
Anderson Drain near Palo Verde, Calif . . . 70-71
Andrade, Calif., Colorado River near . . . 118-121

Bartlett Dam, Verde River below . . . 107-109
Bed material, definition of . . . 2
Benson, San Pedro River near . . . 89-91
Bill Williams River near Planet . . . 147
Bill Williams River basin, partial-record stations in . . . 147
Bright Angel Creek near Grand Canyon . . . 35
Bright Angel Creek basin, water-quality records in . . . 35
Bruce Church Drain near Yuma . . . 150

Cfs-day, definition of . . . 2
Charleston, San Pedro River at . . . 85-88
Childs, Wet Bottom Creek near . . . 104-106
Cibola Valley, Colorado River below . . . 72-73
Collection and examination of data . . . 9-14
Colorado River, above Gila River, near Yuma . . . 78-79
  at Imperial Dam, Ariz.-Calif . . . 74-77
  at Lees Ferry . . . 18-21
  at northerly international boundary, above Morelos Dam, near Andrade, Calif . . . 118-121
  at southerly international boundary, near San Luis . . . 122-123
  at Taylor Ferry, Calif . . . 66-67
  below Cibola Valley . . . 72-73
  below Davis Dam, Ariz.-Nev . . . 50-51
  below Hoover Dam, Ariz.-Nev . . . 48-49
  below Parker Dam, Ariz.-Calif . . . 54-55
  near Grand Canyon . . . 28-34
  near Topock . . . 52-53
Colorado River Indian Reservation Main Canal near Parker . . . 56-57
Conversion factors, chemical constituents . . . 3, 4
  sediment concentration . . . 4
  temperatures . . . 12
Cooperation . . . 1
Cubic foot per second, definition of . . . 2

Davis Dam, Ariz.-Nev., Colorado River below . . . 50-51
Definition of terms . . . 2-7
Discharge, definition of . . . 2
  instantaneous, definition of . . . 2
  mean, definition of . . . 2
Diversions and return flows at and below Imperial Dam . . . 124-145
  partial-record stations for . . . 148-151
Diversions and return flows between Palo Verde Dam and Imperial Dam . . . 62-65, 68-71
Diversions and return flows between Parker Dam and Palo Verde Dam . . . 56-61
Downstream order and station numbers . . . 8, 9
Drain 8-B near Yuma . . . 151
Drainage area, definition of . . . 2
Drainage basin, definition of . . . 2

East Main Canal wasteway near San Luis . . . 144-145

Fredonia, Kanab Creek near . . . 36-39
Frye Creek at Thatcher . . . 84

Gaging station, definition of . . . 3
Gila Gravity Main Canal at Imperial Dam, Ariz.-Calif . . . 124-125
Gila River, above diversions at Gillespie Dam . . . 110-113
  at head of Safford Valley, near Solomon . . . 80-83
  at Kelvin . . . 96-101
  near mouth, near Yuma . . . 114-117
Gila River basin, water-quality records in . . . 80-117
Gillespie Dam, Gila River at . . . 110-113
Grand Canyon, Bright Angel Creek near . . . 35
  Colorado River near . . . 28-34

Page
Hardness, definition of . . . 3
Hoover Dam, Ariz.-Nev., Colorado River below . . . 48-49
  Lake Mead at . . . 44-47
Hydrologic bench-mark station, definition of . . . 7

Imperial Dam, Ariz.-Calif., Colorado River at . . . 74-77
  diversions and return flows at and below . . . 124-145
  partial-record stations for . . . 148-151
  schematic diagram showing water-quality stations on streams, diversions, and return flows below . . . 11
Instantaneous discharge, definition of . . . 2
Introduction . . . 1
Irrigation network stations, definition of . . . 8

Kanab Creek near Fredonia . . . 36-39
Kanab Creek basin, water-quality records in . . . 36-39
Kelvin, Gila River at . . . 96-101

Lake Mead at Hoover Dam, Ariz.-Nev . . . 44-47
Lees Ferry, Colorado River at . . . 18-21
  Paria River at . . . 22-27
Little Colorado River near Cameron . . . 146
Little Colorado River basin, partial-record stations in . . . 146
Littlefield, Virgin River at . . . 40-43
Lower Main Drain near Parker . . . 63

Main Drain near San Luis . . . 140-142
Main Outlet Drain Extension near Morelos Dam . . . 138-139
Mean concentration, definition of . . . 6
Mean discharge, definition of . . . 2
Micrograms per liter, definition of . . . 3
Milliequivalents, conversion table for . . . 3, 4
Milligrams per liter, conversion table for . . . 3, 4
  definition of . . . 3
Miscellaneous site, definition of . . . 5

North Gila Drain No. 1 near Yuma . . . 148
North Gila Drain No. 3 near Yuma . . . 149

Olive Lake Drain near Blythe, Calif . . . 64-65
Outfall Drain near Palo Verde, Calif . . . 68-69

Palo Verde Canal near Blythe, Calif . . . 60-61
Palo Verde Dam, diversions and return flows between, and Parker Dam . . . 56-61
Palo Verde Drain near Parker . . . 62
Paria River at Lees Ferry . . . 22-27
Paria River basin, water-quality records in . . . 22-27
Parker Dam, Ariz.-Calif., Colorado River below . . . 54-55
Partial-record station, definition of . . . 5
Particle size, definition of . . . 5
Particle-size classification, definition of . . . 5
Pesticide program, definition of . . . 8
Poston wasteway near Poston . . . 58-59

Radiochemical program, definition of . . . 8
Reservation Main Drain No. 4 near Yuma . . . 136-137

Salt River below Stewart Mountain Dam . . . 102-103
San Luis, Colorado River near . . . 122-123
San Pedro River, at Charleston . . . 85-88
  at Winkelman . . . 92-95
  near Benson . . . 89-91
Sediment, collection and examination of data . . . 14
  definition of . . . 5
  mean concentration, definition of . . . 6
  suspended, definition of . . . 5
  suspended concentration, definition of . . . 6
  suspended discharge, definition of . . . 6
Selected references . . . 15-17
Sodium adsorption ratio, definition of . . . 6
Solomon, Gila River near . . . 80-83
Solute, definition of . . . 6
Solutes, collection and examination of data . . . 13
South Gila Pump Outlet Channel No. 1 near Yuma . . . 132-133

Preceding page blank